significant competition among computer data storage devices and thus Philips lacked market power in the market for computer data storage discs. However, Philips first created the package licenses long before GigaStorage and Princo entered into their agreements. According to the administrative law judge, the patent package arrangements were instituted in the early 1990s. Yet Princo did not enter into its agreement until June of 1997, and GigaStorage did not enter into its licensing agreement until October of 1999. Thus, any lack of market power that Philips and its colicensors may have had in the early 1990s is irrelevant to the situation in the late 1990s, when the parties entered into the agreements at issue in this case. At that time, according to the administrative law judge's well-supported finding, compact discs had become "unique products [with] no close practice substitutes." Philips's argument about lack of market power is therefore unpersuasive, and for that reason section 271(d)(5) does not provide Philips a statutory safe haven from the judicially created defense of patent misuse.[1]

***1187** [6] Apart from its specific challenge to the Commission's ruling on the market power issue, Philips launches a more broad-based attack on the Commission's

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[1]Before the Commission, Philips argued that section 271(d)(5) abolished the doctrine of per se patent misuse as applied to tying arrangements. In making that argument, Philips relied heavily on the legislative history of the 1988 Act that adopted section 271(d)(5). Because Philips has not renewed that argument in this court, we do not address it, although we note that the legislative history cited by Philips before the Commission indicates congressional skepticism about treating tying arrangements in the context of patent licensing as per se patent misuse, rather than analyzing such arrangements under the rule of reason. *See* 134 Cong. Rec. 32,294-95 (1988) (statement of Rep. Kastenmeier); *id.* at 32,471 (statement of Sen. DeConcini);*id.* at 32,471-72 (statement of Sen. Leahy).

conclusion that Philips's patent licensing policies constitute per se patent misuse. In so doing, Philips makes essentially two arguments: first, that the Commission was wrong as a legal matter in ruling that the package licensing arrangements at issue in this case are among those few practices that the courts have identified as so clearly anticompetitive as to warrant being condemned as per se illegal; and second, that the Commission erred as a factual matter in concluding that Philips's package licensing arrangements reflect the use of market power in one market to foreclose competition in a separate market. We address the two arguments separately.

A

In its brief, the Commission argues that it is "hornbook law" that mandatory package licensing has been held to be patent misuse. While that broad characterization can be found in some treatises, *see* 6 Donald S. Chisum, *Chisum on Patents* § 19.04[3] (2003), *cited in* C.R. Bard, Inc., 157 F.3d at 1373; 8 Ernest B. Lipscomb III, *Lipscomb's Walter on Patents* § 28:27 (3d ed. 1989 & Supp.2003), Philips invites us to consider whether that broad proposition is sound. Upon consideration, we conclude that the proposition as applied to the circumstances of this case is not supported by precedent or reason.

In its opinion, the Commission acknowledged that the *Virginia Panel* case and many other patent tying cases "involve a tying patent and a tied *product*, rather than a tying patent and a tied *patent*." (emphasis in original). The Commission nonetheless concluded that "finding patent misuse based on a tying arrangement between patents in a mandatory package license is a reasonable application of Supreme Court precedent." In so ruling, the Commission relied primarily on two Supreme Court cases: *United States v. Paramount Pictures, Inc.*, 334 U.S. 131, 156-59, 68 S.Ct.

915, 92 L.Ed. 1260 (1948), and *United States v. Loew's, Inc.*, 371 U.S. 38, 44-51, 83 S.Ct. 97, 9 L.Ed.2d 11 (1962). Those cases condemned the practice of "block-booking" movies to theaters (in the *Paramount* case) and to television stations (in the *Loew's* case) as antitrust violations.

Block-booking is the practice in which a distributor licenses one feature or group of features to exhibitors on the condition that the exhibitors agree to license another (presumably inferior) feature or group of features released by the distributor during a given period. In *Paramount* and *Loew's*, the Court held that block-booking, as practiced in those cases, was per se illegal. The Commission reasoned that the practice of block-booking that was the focus of the Court's condemnation in *Paramount* and *Loew's* is similar to the package licensing agreements at issue in this case and that under the analysis employed in *Paramount* and *Loew's*, Philips's package licensing agreements must be condemned as per se patent misuse.

We do not agree with the Commission that the decisions in *Paramount* and *Loew's* govern this case. In *Paramount*, the district court held that the defendant movie distributor had engaged in unlawful ***1188** conduct because it offered to permit exhibitors to show the films they wished to license only if they agreed to license and exhibit other films that they were not interested in licensing. The Supreme Court affirmed that ruling. The Court held that block-booking was illegal because it "prevents competitors from bidding for single features on their individual merits," and because it "adds to the monopoly of a single copyrighted picture that of another copyrighted picture which must be taken and exhibited in order to secure the first." 334 U.S. at 156-57, 68 S.Ct. 915. The result, the Court explained, "is to add to the monopoly of the copyright in violation of the principle of the patent cases involving tying clauses." *Id.* at

158, 68 S.Ct. 915.

Because the block-booking arrangement at issue in *Paramount* required the licensee to exhibit all of the films in the group for which a license was taken, the *Paramount* block-booking was more akin to a tying arrangement in which a patent license is tied to the purchase of a separate product, rather than to an arrangement in which a patent license is tied to another patent license. Indeed, all of the patent tying cases to which the Supreme Court referred in *Paramount* involved tying arrangements in which, as the Court described them, "the owner of a patent [conditioned] its use on the purchase or use of patented or unpatented materials." 334 U.S. at 157, 68 S.Ct. 915. Because the arrangement in the *Paramount* case was equivalent in substance to a patent-to-product tying arrangement, *Paramount* does not stand for the proposition that a pure patent-to-patent tying arrangement, such as Philips's package licensing agreement, is per se unlawful.[2]

Philips gives its licensees the option of using any of the patents in the package, at the licensee's option. Philips charges a uniform licensing fee to manufacture discovered by its patented technology, regardless of which, or how many, of the patents in the package the licensee chooses to use in its manufacturing process. In particular, Philips's

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[2]The Commission argues that the Supreme Court's later decision in *Automatic Radio Co. v. Hazeltine*, 339 U.S. 827, 70 S.Ct. 894, 94 L.Ed. 1312 (1950), supports its broad interpretation of the *Paramount* case because the Supreme Court in *Automatic Radio* characterized *Paramount* as having "condemned" an arrangement "conditioning the granting of a license under one patent upon the acceptance of another and different license." *Id.* at 830-31, 70 S.Ct. 894. We do not, however, interpret that shorthand characterization of *Paramount* as effecting a broadening of the holding of the earlier case and an extension of its rationale to a class of cases far beyond *Paramount's* facts.

package licenses do not require that licensees actually use the technology covered by any of the patents that the Commission characterized as nonessential. In that respect, Philips's licensing agreements are different from the agreements at issue in *Paramount,* which imposed an obligation on the purchasers of package licenses to exhibit films they did not wish to license. That obligation not only extended the exclusive right in one product to products in which the distributor did not have exclusive rights, but it also precluded exhibitors, as a practical matter, from exhibiting other films that they may have preferred over the tied films they were required to exhibit. Because Philips's package licensing agreements do not compel the licensees to use any particular technology covered by any of the licensed patents, the *Paramount* case is not a sound basis from which to conclude that the package licensing arrangements at issue in this case constitute patent misuse per se.

In the *Loew's* case, the district court determined that the licensee television stations were required to pay fees not only ***1189** for the feature films they wanted, but also for additional, inferior films. As in *Paramount*, the fact that the package arrangement required the television stations to purchase exhibition rights for the package at a price that was greater than the price attributable to the desired films made the tying arrangement very much like a tying arrangement involving products. Thus, the Supreme Court explained that a "substantial portion of the licensing fees represented the cost of the inferior films which the stations were required to accept." Loew's, 371 U.S. at 49, 83 S.Ct. 97. Following the approach employed in *Paramount,* the Supreme Court applied the principles of cases involving tying arrangements between patents and unpatented products and concluded that the tying arrangements in the case before it had all the anticompetitive features of the block-booking arrangements in *Paramount* and no redeeming procompetitive features.

In this case, unlike in *Loew's*, there is no evidence that a portion of the royalty was attributable to the patents that the Commission characterized as nonessential. While the administrative law judge found that GigaStorage "inquired into obtaining a license to less than all of the patents on Philips's patent list," the administrative law judge noted that GigaStorage did so because it "hoped that by eliminating some patents the royalty rate would be lower." There is no evidence that GigaStorage had any basis for its expectation that a smaller patent package might result in a lower royalty rate. In fact, the administrative law judge found that Philips had responded to that overture from GigaStorage by explaining that "the royalty is the same regardless of the number of patents used." Moreover, the administrative law judge found that the royalty rate for licensing Philips's patents "remains the same regardless of which option(s) in the agreement one selects," and that the royalty rate "does not increase or decrease if more or fewer patents are used." Thus, it is clear that the royalty charged by Philips was not increased because of the inclusion of the Farla, Iwasaki, Yamamoto, and Lokhoff patents. There is therefore no basis for conjecture that a hypothetical licensing fee would have been lower if Philips had offered to license the patents on an individual basis or in smaller packages.

Aside from *Paramount* and *Loew's*, the Commission relies on cases involving tying arrangements in which the patent owner conditions the availability of a patent license on the patentee's agreement to purchase a staple item of commerce from the patentee. *See* *Va. Panel*, 133 F.3d at 869; *Senza-Gel Corp. v. Seiffhart*, 803 F.2d 661 (Fed.Cir.1986). Those cases, however, are readily distinguishable because of the fundamental difference between an obligation to purchase a product and the extension of a nonexclusive license to practice a patent.

[7] A nonexclusive patent license is simply a promise not to sue for infringement. *See Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1552 (Fed.Cir.1995) (en banc); *Spindelfabrik Suessen-Schurr Stahlecker & Grill GmbH v. Schubert & Salzer Maschinenfabrik Aktiengesellschaft*, 829 F.2d 1075, 1081 (Fed.Cir.1987). The conveyance of such a license does not obligate the licensee to do anything; it simply provides the licensee with a guarantee that it will not be sued for engaging in conduct that would infringe the patent in question.

[8] In the case of patent-to-product tying, the patent owner uses the market power conferred by the patent to compel customers to purchase a product in a separate market that the customer might otherwise purchase from a competitor. *United States v. US. Gypsum Co.*, 333 U.S. 364, 400, 68 S.Ct. 525, 92 L.Ed. 746 (1948); *Int'l Salt Co. v. United States*, 332 U.S. 392, 395, 68 S.Ct. 12, 92 L.Ed. 20 (1947);***1190** *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488, 493, 62. S.Ct. 402, 86 L.Ed. 363 (1942). The patent owner is thus able to use the market power conferred by the patent to foreclose competition in the market for the product.

[9] By contrast, a package licensing agreement that includes both essential and nonessential patents does not impose any requirement on the licensee. It does not bar the licensee from using any alternative technology that may be offered by a competitor of the licensor. Nor does it foreclose the competitor from licensing his alternative technology; it merely puts the competitor in the same position he would be in if he were competing with unpatented technology.

A package license is in effect a promise by the patentee not to sue his customer for infringing any patents on

whatever technology the customer employs in making commercial use of the licensed patent. That surrender of rights might mean that the customer will choose not to license the alternative technology offered by the patentee's competition, but it does not compel the customer to use the patentee's technology. The package license is thus not anticompetitive in the way that a compelled purchase of a tied product would be.

Contrary to the Commission's characterization, the intervenors were not "forced" to "take" anything from Philips that they did not want, nor were they restricted from obtaining licenses from other sources to produce the relevant technology. Philips simply provided that for a fixed licensing fee, it would not sue any licensee for engaging in any conduct covered by the entire group of patents in the package. By analogy, if Philips had decided to surrender its "nonessential" patents or had simply announced that it did not intend to enforce them, there would have been no way for the manufacturers to decline or reject Philips's decision. Yet the economic effect of the package licensing arrangement for Philips's patents is not fundamentally different from the effect that such decisions would have had on third parties seeking to compete with the technology covered by those "nonessential" patents. Thus, we conclude that the Commission erred when it characterized the package license agreements as a way of forcing the intervenors to license technology that they did not want in order to obtain patent rights that they did.[3]

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[3]The effect of a nonexclusive license was different before the Supreme Court, in *Lear, Inc. v. Adkins*, 395 U.S. 653, 89 S.Ct. 1902, 23 L.Ed.2d 610 (1969), abolished the patent doctrine of licensee estoppel. Before *Lear*, a nonexclusive license had a legal effect that made it more than a mere covenant by the licensee not to sue. Acceptance of the license barred the licensee from challenging the validity of the patent.

The Commission stated that it would not have found the package licenses to constitute improper tying if Philips had offered to license its patents on an individual basis, as an alternative to licensing them in packages. The Commission's position, however, must necessarily be based on an assumption that, if the patents were offered on an individual basis, individual patents would be offered for a lower price than the patent packages as a whole. If that assumption were not implicit in the Commission's conclusion, the Commission would be saying in effect that it would be unlawful for Philips to charge the same royalty for ***1191** its essential patents that it charges for its patent packages and to offer the nonessential patents for free. Yet that sort of pricing policy plainly would not be unlawful. *See* *Directory Sales Mgmt. Corp. v. Ohio Bell Tel. Co.*, 833 F.2d 606, 609-10 (6th Cir.1987).[4]

Some of the early decisions regarding patent-to-patent tying arrangements appear to have been based, at least in part, on that feature of pre-*Lear* patent licenses. *See, e.g.*, *Am. Securit Co. v. Shatterproof Glass Corp.*, 268 F.2d 769, 777 (3d Cir.1959); *Int'l Mfg. Co. v. Landon*, 336 F.2d 723, 731 (9th Cir.1964); *see also* *Duplan Corp. v. Deering Milliken, Inc.*, 444 F.Supp. 648, 699 (D.S.C.1977), *affd in pertinent part*, 594 F.2d 979 (4th Cir.1979). In the post-*Lear* era, the "acceptance" of a license has no such restrictive effect on the licensee's freedom.

[4]Of course, in a tying case if the evidence shows that the price of a bundled product reflects any of the cost of the tied product, "customers are purchasing the tied product, even if it is touted as being free." *Multistate Legal Studies, Inc. v. Harcourt Brace Jovanovich Legal & Prof'l Publ'ns, Inc.*, 63 F.3d 1540, 1548 (10th Cir.1995), citing 3 Phillip E. Areeda & Donald F. Turner, *Antitrust Law* ¶ 733a (1978) (tying may exist "when a machine is sold or leased at a price that covers 'free' servicing"); *see also* *United States v. Microsoft Corp.*, 253 F.3d 34, 68 (D.C.Cir.2001) ("the antitrust laws do not condemn even a monopolist for offering its product at an attractive price, and we therefore have no warrant to condemn Microsoft for offering either IE or the IEAK free of charge"). The evidence in this case, however, does not indicate that there

To the extent that the Commission's decision is based on an assumption that individual licenses would necessarily be available for a lower price than package licenses, that assumption is directly contrary to the evidence and even to the administrative law judge's findings of fact. As noted above, the administrative law judge found that the royalty rate under Philips's package licenses depended on the number of discs the manufacturer produced under the authority of the license, not the number of individual patents the manufacturer used to produce those discs. That is, the royalty rate did not vary depending on whether the licensees used only the essential patents or used all of the patents in the package. Thus, it seems evident that if Philips were forced to offer licenses on an individual basis, it would continue to charge the same per unit royalty regardless of the number of patents the manufacturer chose to license. That alteration in Philips's practice would have absolutely no effect on the would-be competitors who wished to offer alternatives to the technology represented by Philips's so-called nonessential patents, since those patents would effectively be offered for free, and the competitors would therefore still have to face exactly the same barriers--the availability of a free alternative to the technology that they were trying to license for a fee.

More generally, the Commission's assumption that a license to fewer than all the patents in a package would presumably carry a lower fee than the package itself ignores the reality that the value of any patent package is largely, if not entirely, based on the patents that are essential to the technology in question. A patent that is nonessential because it covers technology that can be fully replaced by alternative

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is a hidden charge for the so-called nonessential patents in the Philips patent packages.

technology that is available for free is essentially valueless. A patent that is nonessential because it covers technology that can be fully replaced by alternative technology that is available through a license from another patent owner has value, but its value is limited by the price of the alternative technology. Short of imposing an obligation on the licensor to make some sort of allocation of fees across a group of licenses, there is no basis for the Commission to conclude that a smaller group of the licenses--the so-called "essential" licenses--would have been available for a lower fee if they had not been "tied to" the so-called nonessential patents.

It is entirely rational for a patentee who has a patent that is essential to particular technology, as well as other patents that are not essential, to charge what the market will bear for the essential patent and to offer the others for free. Because a ***1192** license to the essential patent is, by definition, a prerequisite to practice the technology in question, the patentee can charge whatever maximum amount a willing licensee is able to pay to practice the technology in question. If the patentee allocates royalty fees between its essential and nonessential patents, it runs the risk that licensees will take a license to the essential patent but not to the nonessential patents. The effect of that choice will be that the patentee will not be able to obtain the full royalty value of the essential patent. For the patentee in this situation to offer its nonessential patents as part of a package with the essential patent at no additional charge is no more anticompetitive than if it had surrendered the nonessential patents or had simply announced a policy that it would not enforce them against persons who licensed the essential patent. In either case, those offering technology that competed with the nonessential patents would be unhappy, because they would be competing against free technology. But the patentee would not be using his essential patent to obtain power in the market for the technology covered by the

nonessential patents. This package licensing arrangement cannot fairly be characterized as an exploitation of power in one market to obtain a competitive advantage in another.[5]

Aside from the absence of evidence that the package licensing arrangements in this case had the effect of impermissibly broadening the scope of the "essential" patents with anticompetitive effect, Philips argues that the Commission failed to acknowledge the unique procompetitive benefits associated with package licensing. Philips points to the federal government's guidelines for licensing intellectual property, which recognize that patent packages "may provide procompetitive benefits by integrating complementary technologies, reducing transaction costs, clearing blocking positions, and avoiding costly infringement litigation. By promoting the dissemination of technology, cross-licensing and pooling arrangements are often procompetitive." U.S. Department of Justice and Federal Trade Commission, *Antitrust Guidelines for the Licensing of Intellectual Property* § 5.5 (1995); *see also* Herbert Hovenkamp, *IP and Antitrust* § 34.2c, at 34-7 (2004).

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[5]The implication of the Commission's decision is that a party with both an essential patent and a nonessential patent is not allowed to package the two together and only offer the package for a single price. That would have the perverse effect of potentially putting a party owning both an essential patent and a nonessential but related patent in a worse position than a party owning only the essential patent. The party owning only the essential patent would be free to charge any licensing fee up to the maximum that a manufacturer would be willing to pay to practice the patented technology, while a party owning both the essential patent and a nonessential patent would be barred from extracting that maximum licensing fee for its essential patent and assuring the manufacturer that it would not be subject to suit on the nonessential patent.

Philips introduced evidence that package licensing reduces transaction costs by eliminating the need for multiple contracts and reducing licensors' administrative and monitoring costs. *See* Tex. Instruments, Inc. v. Hyundai Elecs., 49 F.Supp.2d 893, 901 (E.D.Tex.1999) (describing how "extremely expensive and time-consuming" it is for parties to license and manage the licensing of technology by using individual patents and how it is preferable to employ a patent portfolio). Package licensing can also obviate any potential patent disputes between a licensor and a licensee and thus reduce the likelihood that a licensee will find itself involved in costly litigation over unlicensed patents with potentially adverse consequences for both parties, such as a finding that the licensee infringed the unlicensed ***1193** patents or that the unlicensed patents were invalid. *See* Steven C. Carlson, Patent Pools and the Antitrust Dilemma, 16 Yale J. on Reg. 359, 379-81 (1999). Thus, package licensing provides the parties a way of ensuring that a single licensing fee will cover all the patents needed to practice a particular technology and protecting against the unpleasant surprise for a licensee who learns, after making a substantial investment, that he needed a license to more patents than he originally obtained. Finally, grouping licenses in a package allows the parties to price the package based on their estimate of what it is worth to practice a particular technology, which is typically much easier to calculate than determining the marginal benefit provided by a license to each individual patent. In short, package licensing has the procompetitive effect of reducing the degree of uncertainty associated with investment decisions.

The package licenses in this case have some of the same advantages as the package licenses at issue in the *Broadcast Music* case. The Supreme Court determined in that case that the blanket copyright package licenses at issue had useful, procompetitive purposes because they gave the

licensees "unplanned, rapid, and indemnified access to any and all of the repertory of [musical] compositions, and [they gave the owners] a reliable method of collecting for the use of the their copyrights." 441 U.S. at 20, 99 S.Ct. 1551. While "[i]ndividual sales transactions [would be] quite expensive, as would be individual monitoring and enforcement," a package licensing agreement would ensure access and save costs. *Id.* Hence, the Supreme Court determined that such conduct should fall under "a more discriminating examination under the rule of reason." *Id.* at 24, 99 S.Ct. 1551.

In light of the efficiencies of package patent licensing and the important differences between product-to-patent tying arrangements and arrangements involving group licensing of patents, we reject the Commission's conclusion that Philips's conduct shows a "lack of any redeeming virtue" and should be "conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use." *N. Pac. fly. Co. v. United States*, 356 U.S. 1, 5, 78 S.Ct. 514, 2 L.Ed.2d 545 (1958). We therefore hold that the analysis that led the Commission to apply the rule of per se illegality to Philips's package licensing agreements was legally flawed.[6]

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[6]The Supreme Court recently granted certiorari in *Independent Ink, Inc. v. Illinois Tool Works, Inc.*, 396 F.3d 1342 (Fed.Cir.), cert. granted, --- U.S. ----, 125 S.Ct. 2937, 162 L.Ed.2d 865 (2005), a case involving a tying arrangement involving a patent and an unpatented product. It is possible that the Supreme Court's decision in that case will offer some guidance with respect to the patent misuse issue presented by this case, but because the circumstances of the two cases are quite different, we have determined that the proper course is to resolve this appeal without waiting for the Supreme Court's decision in *Independent Ink*.

[10] In the alternative, Philips argues that the Commission's finding of per se patent misuse was not justified by the facts of this case. In particular, Philips contends that the evidence did not show that there were commercially viable alternatives to the technology covered by the so-called "nonessential" patents in the Philips licensing packages that any of its licensees would have preferred to use.

[11] In order to show that a tying arrangement is per se unlawful, a complaining party must demonstrate that it links ***1194** two separate products and has an anticompetitive effect in the market for the second product. The Supreme Court explained that the "essential characteristic" of an invalid tying arrangement

> lies in the seller's exploitation of its control over the tying product to force the buyer in to the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms. When such "forcing" is present, competition on the merits in the market for the tied item is restrained ....

Jefferson Parish, 466 U.S. at 12, 104 S.Ct. 1551; id at 20-21, 104 S.Ct. 1551 ("[A] tying arrangement cannot exist unless two separate markets have been linked."); *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1426 (Fed.Cir.1997) (impermissible tying in the context of patent misuse if patentee uses a patent "which enjoys market power in the relevant market ... to restrain competition in an unpatented product"). The Commission found that the "nonessential" patents, i.e., the Farla, Iwasaki, Yamamoto, and Lokhoff patents, constituted separate products from the "essential" patents in the package and that the package licensing agreements adversely affected competition in the

market for the nonessential technology.[7] The Commission's analysis of that factual issue was flawed, however.

[12] Patents within a patent package can be regarded as "nonessential" only if there are "commercially feasible" alternatives to those patents. *See Int'l M . Co. v. Landon*, 336 F.2d 723, 729 (9th Cir.1964). If there are no commercially practicable alternatives to the allegedly nonessential patents, packaging those patents together with so-called essential patents can have no anticompetitive effect in the marketplace, because no competition for a viable alternative product is foreclosed. In such a case, the only effect of finding per se patent misuse is to give licensees a way of avoiding their obligations under the licensing agreements, with no corresponding benefit to competition in any real-world market.

[13] The Department of Justice has recognized that the availability of commercially viable alternative technology is relevant to the analysis of package licensing agreements. In particular, the Department has stated that patent packages do not have the undesirable effects of tying if they include patents to technology for which there is no practical or realistic alternative. *See, e.g.,* Business Review Letter, U.S. Department of Justice, Antitrust Division (Dec. 16, 1998). That principle is consistent with the main purpose of the separate-products inquiry in tying cases generally, which is to ensure that conduct is not condemned as

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[7]The intervenors note that "there existed a number of commercially-available CD-R discs utilizing alternative technology that did not infringe these supposedly essential patents." For support, intervenors cite the opinion of the administrative law judge, who determined that two patents held by Taiyo Yuden were not essential. Because the Commission did not address those patents, however, they are not relevant to this appeal.

anticompetitive "unless there is sufficient demand for the purchase of [the tied product] separate from the [tying product] to identify a distinct product market in which it is efficient to offer [the tied product]." *Jefferson Parish*, 466 U.S. at 21-22, 104 S.Ct. 1551; *see Mallinckrodt*, 976 F.2d at 704 (tying is misuse only when the patentee uses its patent to obtain "market benefit" beyond that conferred by the patent).

In this case, the evidence did not show that there were commercially viable substitutes for the Farla, Iwasaki, Yamamoto, and Lokhoff patents that disc manufacturers wished to use in making compact discs ***1195** compliant with the Orange Book standards. There was thus insufficient evidence that including the four "nonessential" patents in the Philips patent packages had an actual anticompetitive effect. That is, the evidence did not show that there were commercially viable substitutes for those four "nonessential" patents that disc manufacturers wished to use in making compact discs compliant with the Orange Book standards.

Two of those four patents, the Farla and Iwasaki patents, cover a method of controlling the recording of information onto compact discs, i.e., a "write strategy," including an "optimum power control procedure."[8] The

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[8]In its amicus curiae brief, the New York Intellectual Property Association notes that, unlike the other three allegedly nonessential patents, the Iwasaki patent would expire after all of the undisputedly essential patents. As a result, the presence of the Iwasaki patent in a patent licensing package could have the effect of extending the obligation to pay royalties beyond the expiration date of the "essential" patents. A provision requiring that royalties be paid beyond the life of a patent has been held to be unenforceable. *See Brulotte v. Thys Co.*, 379 U.S. 29, 30, 85 S.Ct. 176, 13 L.Ed.2d 99 (1964). However, because neither the Commission nor the administrative law judge addressed the impact of that potential temporal extension of the royalty obligation, and none of the parties addressed that issue on appeal in their briefs, we do not

Commission found that another company, Calimetrics, Inc., had developed a commercially viable, alternative method of performing the write strategy and the optimum power control procedure that is not covered by the Farla and Iwasaki patents. In making that finding, the Commission relied solely on the testimony of Dr. Stephen McLaughlin, Calimetrics's principal scientist, who had helped to create the technology in question. Dr. McLaughlin testified that Calimetrics had created a general write strategy; that "in the development of [that] technology [Calimetrics] determined that this write strategy was applicable to CD-R and CD-RW systems"; and that the company has "spent an enormous amount of effort promoting [its] idea ...." While that testimony was sufficient to support the Commission's finding that there was an alternative technology to the Farla and Iwasaki patents, it did not show that the Calimetrics technology was an alternative that Philips's licensees wished to use in place of the technology covered by the Farla and Iwasaki patents. The Commission did not point to any evidence that any licensee or potential licensee asked to have any of the four "nonessential" patents removed from the package license and that Philips refused to do so. Although, as noted, GigaStorage asked about obtaining a license to only certain patents, in the hope that by eliminating some patents the royalty rate would be lower, the evidence did not show that GigaStorage's request related to the four "nonessential" patents or that GigaStorage had any interest in licensing Calimetrics's technology.

Dr. McLaughlin testified, regarding a hypothetical situation, that "[w]hen we go and try to license this technology, the companies say we have technology that performs a function of this type, and ... I presume they would

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address the issue here.

be referring to [the nonessential CD-R/CD-RW] patents." That testimony, however, falls short of showing that any of Philips's licensees were forced by the package license agreements to license the Farla and Iwasaki patents when they would have preferred to use Calimetrics's technology. Dr. McLaughlin did not testify as to even a single specific instance on which a disc manufacturer expressed a preference for the Calimetrics technology but was dissuaded from licensing it by Philips's insistence on licensing the Farla and Iwasaki patents as part of its package license arrangements. ***1196** The evidence thus did not show that there was a demand for the Calimetrics technology that went unmet because of the coercive effect of Philips's inclusion of the Farla and Iwasaki patents in its package licensing agreements.

[14] As for the Yamamoto patent, which covers a method of creating master discs by using one laser beam, the Commission again relied on the testimony of Dr. McLaughlin. The Commission found that Calimetrics had developed a commercially viable alternative method of creating master discs by using two laser beams. Dr. McLaughlin's testimony, however, does not support the Commission's finding. Dr. McLaughlin stated that it was "fairly easy to conceive of alternative methods for implementing the functionality of the intention of ... what [the Yamamoto] patent is directed towards" and that it would "certainly [be] possible to do this using two beams ...." Yet the mere possibility that alternative technology might at some point become available is not sufficient to support a finding that at the time the Philips licenses were executed, there was actually a commercially available alternative to the technology claimed in the Yamamoto patent.

[15] Finally, the Commission found that the Lokhoff patent was not "technically essential" to manufacturing discs

compliant with the Orange Book standard. The Lokhoff patent covers a system for providing copy protection by placing a "copy bit" into a compact disc for the purpose of determining the type of information that may be received for recording. The Commission found that an alternative exists to the Lokhoff patent. In so doing, the Commission again relied on testimony by Dr. McLaughlin, who stated that copy protection could be achieved by "embedding copy protection and user data," instead of by using a copy bit. Dr. McLaughlin's testimony, however, does not establish that the alternative technology was commercially available to be substituted for the technology of the Lokhoff patent. He stated that the alternative embedding method was a "very wide area of research. There's a lot of activity going on these days in using this general approach ...." That testimony indicates research interest in a possible approach to solving the problem of embedding, but it does not establish the existence of an available, commercially practicable alternative to Philips's technology.

[16] Beyond the absence of factual support for the Commission's findings, the Commission's analysis of the four "nonessential" patents demonstrates a more fundamental problem with applying the per se rule of illegality to patent packages such as the ones at issue in this case. If a patentholder has a package of patents, all of which are necessary to enable a licensee to practice particular technology, it is well established that the patentee may lawfully insist on licensing the patents as a package and may refuse to license them individually, since the group of patents could not reasonably be viewed as distinct products. *See* *Landon*, 336 F.2d at 729. Yet over time, the development of alternative technology may raise questions whether some of the patents in the package are essential or whether, as in this case, there are alternatives available for the technology covered by some of the patents. Indeed, in a

fast-developing field such as the one at issue in this case, it seems quite likely that questions will arise over time, such as what constitutes an "essential" patent for purposes of manufacturing compact discs compliant with the Orange Book standard. Roger B. Andewelt, *Analyzing Patent Pools Under the Antitrust Laws*, 53 Antitrust L.J. 611, 616 (1985) ("the line between competitive patents and blocking or complementary patents is frequently very ***1197** difficult to draw"). Under the Commission's approach, an agreement that was perfectly lawful when executed could be challenged as per se patent misuse due to developments in the technology of which the patentees are unaware, or which have just become commercially viable. Such a rule would make patents subject to being declared unenforceable due to developments that occurred after execution of the license or were unknown to the parties at the time of licensing. Not only would such a rule render licenses subject to invalidation on grounds unknown at the time of licensing, but it would also provide a strong incentive to litigation by any licensee, since the reward for showing that even a single license in a package was "nonessential" would be to render all the patents in the package unenforceable. For that reason as well, we reject the Commission's ruling that package agreements of the sort entered into by Philips and the intervenors must be invalidated on the ground that they constitute per se patent misuse.

III

[17] In the alternative, the Commission held that Philips's package licensing agreements constituted patent misuse under the rule of reason. The Commission's analysis under the rule of reason largely tracked the analysis that led it to conclude that the package licensing agreements constituted per se patent misuse.

As in the case of its ruling on per se patent misuse,

the fulcrum of the Commission's conclusion that Philips was guilty of patent misuse under the rule of reason was its conclusion that the package licenses at issue in this case had "the anticompetitive effect of foreclosing competition in the alternative technology that competes with the technology covered by a nonessential patent that was included as a so-called 'essential' patent." On that issue, the Commission adopted the administrative law judge's analysis and conclusions with respect to the Farla, Iwasaki, Yamamoto, and Lokhoff patents, but it took no position with respect to other patents that the administrative law judge found to be nonessential.

Focusing particularly on the Farla and Iwasaki patents, the Commission found that those patents were not essential to manufacturing CD-Rs and CD-RWs compliant with the Orange Book standards and that including those patents in the patent packages foreclosed competition by Calimetrics. The Commission briefly addressed the assertedly procompetitive effects of the package licensing arrangements but upheld the administrative law judge's conclusion that those arrangements had a net anticompetitive effect because "the convenience to manufacturers of a broad package of patents was outweighed by the anticompetitive effect on alternative technologies of packaging nonessential patents with essential patents."

[18][19] Under the rule of reason, the finder of fact must determine if the practice at issue is "reasonably within the patent grant, i.e., that it relates to subject matter within the scope of the patent claims." *Va. Panel*, 133 F.3d at 869, *quoting Mallinckrodt*, 976 F.2d at 708. If the practice does not "broaden the scope of the patent, either in terms of covered subject matter or temporally," then the patentee is not chargeable with patent misuse. *Va. Panel*, 133 F.3d at 869. More specifically, "the finder of fact must decide

whether the questioned practice imposes an unreasonable restraint on competition, taking into account a variety of factors, including specific information about the relevant business, its condition before and after the restraint was imposed, and the restraint's history, nature and effect." *Va. Panel*, 133 F.3d at 869, quoting ***1198**:*State Oil Co. v. Khan*, 522 U.S. 3, 10, 118 S.Ct. 275, 139 L.Ed.2d 199 (1997); *see also Monsanto Co.*, 363 F.3d at 1341.

The Commission's rule of reason analysis is flawed for two reasons. Most importantly, its conclusion was largely predicated on the anticompetitive effect on competitors offering alternatives to the four so-called nonessential patents in the Philips patent packages. Yet, as we have already held, the evidence did not show that including those patents in the patent packages had a negative effect on commercially available technology. The Commission assumed that there was a foreclosure of competition because compact disc manufacturers would be induced to accept licenses to the technology covered by the Farla and Iwasaki patents and therefore would be unwilling to consider alternatives. As noted, however, there was no evidence before the Commission that any manufacturer had actually refused to consider alternatives to the technology covered by those patents or for that matter that any commercially viable alternative actually existed.

In addition, as in its per se analysis, the Commission did not acknowledge the problems with licensing patents individually, such as the transaction costs associated with making individual patent-by-patent royalty determinations and monitoring possible infringement of patents that particular licensees chose not to license. The Commission also did not address the problem, noted above, that changes in the technology for manufacturing compact discs could render some patents that were indisputably essential at the

time of licensing arguably nonessential at some later point in the life of the license. To hold that a licensing agreement that satisfied the rule of reason when executed became unreasonable at some later point because of technological development would introduce substantial uncertainty into the market and displace settled commercial arrangements in favor of uncertainty that could only be resolved through expensive litigation.

Finally, the Commission failed to consider the efficiencies that package licensing may produce because of the innovative character of the technology at hand. Given that the technology surrounding the Orange Book standard was still evolving, there were many uncertainties regarding what patents might be needed to produce the compact discs. As noted, package license agreements in which the royalty was based on the number of units produced, not the number of patents used to produce them, can resolve in advance all potential patent disputes between the licensor and the licensee, whereas licensing patent rights on a patent-by-patent basis can result in continuing disputes over whether the licensee's technology infringes certain ancillary patents owned by the licensor that are not part of the group elected by the licensee.

We therefore conclude that the line of analysis that the Commission employed in reaching its conclusion that Philips's package licensing agreements are more anticompetitive than procompetitive, and thus are unlawful under the rule of reason, was predicated on legal errors and on factual findings that were not supported by substantial evidence. For these reasons, we cannot uphold the Commission's decision that Philips's patents are unenforceable because of patent misuse under the rule of reason.

Because the Commission did not address all of the issues presented by the administrative law judge's decision under both the per se and rule of reason analysis, further proceedings before the Commission may be necessary with respect to whether Philips's patents are enforceable and, if so, whether Philips is entitled to any relief from the Commission. Accordingly, we reverse the Commission's ruling on patent ***1199** misuse for the reasons stated, and we remand this case to the Commission for further proceedings consistent with this opinion.

REVERSED AND REMANDED.

424 F.3d 1179, 76 U.S.P.Q.2d 1545

PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

CONFIDENTIAL INFORMATION DELETED

In the Matter of CERTAIN RECORDABLE COMPACT DISCS AND REWRITABLE COMPACT DISCS
Inv.No. 337-TA-474

COMMISSION OPINION

This section 337 investigation is before the Commission for final disposition of the issues under review and, if necessary, for determinations on remedy, the public interest, and bonding. We have determined to affirm the presiding administrative law judge's ("ALJ's") conclusion that the asserted patents in this investigation are unenforceable for patent misuse, and consequently find no violation of section 337 of the Tariff Act of 1930.

PROCEDURAL HISTORY

The Commission instituted this investigation on July 26, 2002, based on a complaint filed by U.S. Philips Corporation of Tarrytown, NY ("Philips" or "complainant"). 67 Fed. Reg. 48,948 (2002). The complaint, as supplemented, alleged violations of section 337 in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain recordable compact discs ("CD-Rs") and rewritable compact discs ("CD-RWs") by reason of infringement of claims of six U.S. patents (collectively, "the asserted

patents"): claims 1, 5, and 6 of U.S. Patent No. 4,807,209 (issued February 21, 1989) ("the '209 patent"); claim 11 of U.S. Patent No. 4,962,493 (issued October 9, 1990) ("the '493 patent"); claims 1, 2, and 3 of US. Patent No. 4,972,401 (issued November 20, 1990) ("the '401 patent"); claims 1, 3, and 4 of U.S. Patent No. 5,023,856 (issued June 11, 1991) ("the '856 patent"); claims 1-5, and 6 of U.S. Patent No. 4,999,825 (issued March 12, 1991) ("the '825 patent"); and claims 20, 23-33, and 34 of U.S. Patent No. 5,418,764 (issued May 23, 1995) ("the '764 patent"). 67 Fed Reg. 48,948 (2002).

The notice of investigation identified 19 respondents, including GigaStorage Corporation Taiwan of Hsinchu, Taiwan; GigaStorage Corporation USA of Livermore, California (collectively, "GigaStorage"); and Linberg Enterprise Inc. of West Orange, New Jersey ("Linberg"). 67 Fed Reg. 48,948 (2002). On August 14, 2002, the ALJ issued an initial determination ("ID") (Order No. 2) granting a motion to intervene as respondents by Princo Corporation of Hsinchu, Taiwan, and Princo America Corporation of Fremont, California (collectively, "Princo"). That ID was not reviewed by the Commission and thereby became the Commission's determination. GigaStorage, Linberg, and Princo ("respondents") are the only remaining active respondents in this investigation.[1]

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[1] *See* ALJ Order No. 6 (an unreviewed ID terminating eight respondents on the basis of a consent order); ALJ Order No. 17 (an unreviewed ID terminating three respondents on the basis of a consent order and settlement agreement); ALJ Order No. 18 (an unreviewed LD terminating one respondent on the basis of a consent order and settlement agreement); and ALT Order No. 21 (an unreviewed ID finding four respondents in default).

The ALJ issued his final ID on October 24, 2003. Although the ALJ found that the domestic industry requirement of section 337 is satisfied in this investigation, that the asserted patent claims are infringed by the accused products, and that the asserted claims are not invalid, he found no violation of section 337 because he concluded that all of the asserted patents are unenforceable by reason of patent misuse on the part of complainant Philips. ID at 139-220.

On November 5, 2003, complainant Philips petitioned for review of the subject ID in part. Respondents and the Commission investigative attorney ("IA") opposed the petition. On December 8, 2003, the ALJ issued his recommended determination on remedy and bonding. On December 10, 2003, the Commission determined to review all of the ID's findings of fact and conclusions of law concerning patent misuse. The Commission determined not to review the remainder of the ID. In its review notice, the Commission invited the parties to file written submissions on the issues under review, and it invited interested persons to file written submissions on the issues of remedy, the public interest, and bonding. The Commission also requested briefing from the parties on four questions. Initial submissions were filed on January 9, 2004, and replies were filed on January 16, 2004, and January 20, 2004.

STANDARD ON REVIEW

This investigation is before us on review of the ALJ's final ID on violation, which issued on October 24, 2003. Commission review of an ID is limited to the issues set forth in the notice of review and all subsidiary issues therein. *Certain Bar Clamps, Bar Clamp Pads, and Related Packaging Display and Other Materials*, Inv. No. 337-TA-429, Commission Opinion at 3 (January 1, 2001). "On

review, the Commission may affirm, reverse, modify, set aside or remand for further proceedings, in whole or in part, the initial determination of the administrative law judge. The Commission may also make any findings or conclusions that in its judgment are proper based on the record in the proceeding." 19 C.F.R. § 210.45(c).

Once the Commission determines to review an initial determination, its review is conducted under a *de novo* standard. *Certain Polyethylene Terephthalate Yarn and Products Containing Same*, Inv. No. 337-TA-457, Commission Opinion at 9 (June 18, 2002). Upon review the "Commission has 'all the powers which it would have in making the initial determination,' except where the issues are limited on notice or by rule." *Certain Flash Memory Circuits and Products Containing Same*, Inv. No. 337-TA-382, Commission Opinion on the Issues Under Review and on Remedy, the Public Interest, and Bonding at 9-10 (June 2, 1997), USITC Pub. 3046 (July 1997) (quoting *Certain Acid-Washed Denim Garments and Accessories*, Inv. No. 337-TA-324, Commission Opinion at 5 (Nov. 1992)).

As stated in our review notice, we determined to review in part the ALJ's final ID. We thereby adopted as our own the unreviewed portions of the ID. With respect to the portions of the ID that are under review, the ALJ's findings, conclusions, and supporting analysis that are not inconsistent with this opinion are hereby adopted. The ALJ's findings, conclusions, and supporting analysis that are inconsistent with this opinion are not adopted.

ISSUES UNDER REVIEW

The ALJ found that the asserted patents are unenforceable for patent misuse by complainant Philips. He found patent misuse *per se* and also found patent misuse

under a "rule of reason" standard. We affirm the ALJ's conclusion that the asserted patents are unenforceable for patent misuse *per se*, but on the ground, discussed below, that complainant's practice of mandatory package licensing constitutes patent misuse *per se* as a tying arrangement between (1) licenses to patents that are essential to manufacture CD-Rs or CD-RWs according to Orange Book standards[2] and (2) licenses to other patents that are not essential to that activity.[3] We also adopt the ALJ's conclusion that the asserted patents are unenforceable for patent misuse under a rule of reason standard based on the ALJ's analysis of and findings as to the tying arrangement.[4]

I. Analysis of Patent Misuse *Per se*

Complainant argues that patent misuse *per se* premised on tying arrangements was eliminated by 35 U.S.C. § 271(d)(5). Respondents and the IA oppose this argument.

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[2]The technical standards for the manufacture of CD-Rs and CD-RWs are set out in two publications that are jointly issued by Philips and Sony Corporation ("Sony"). "Compact Disc Recordable System Description" (RX-407C), which is commonly referred to as Part II of the Orange Book, pertains to CD-Rs. "Compact Disc ReWritable System Description" (RX-408C), which is commonly referred to as Part III of the Orange Book, pertains to CD-RWs. ID at 139-40.

[3]We take no position on the ALJ's conclusion that the asserted patents are unenforceable for patent misuse *per se* based on theories of price fixing and price discrimination.

[4]We take no position on the ALJ's conclusion that the royalty rate structure of the CD-R/RW patent pools is an unreasonable restraint of trade, but adopt those portions of the ALJ's analysis of the royalty rate mechanism under the rule of reason (ID at 213-19) that are relevant to the issue of whether the anticompetitive effects of including nonessential patents in the list of so-called essential patents outweigh the procompetitive effects.

Complainant also contends that, even apart from section 271(d)(5), Federal Circuit case law prohibits finding patent misuse *per se* based on a tying arrangement between two patent licenses (as opposed to between a patent license and a product). The IA takes the position that tying arrangements between two patent licenses should not be patent misuse *per se*, but should be analyzed under the rule of reason. Respondents oppose these arguments. For the reasons discussed in part A, *infra*, we conclude that section 271(d)(5) did not eliminate patent misuse *per se* premised on tying arrangements, and in part B, *infra*, we conclude that patent misuse *per se* may be based on a tying arrangement between two patent licenses. In part C, *infra*, we discuss the legal standard for demonstrating a tying arrangement between two patent licenses, and in part D, we apply that standard to the licensing arrangements at issue in this investigation.

A. Tying Arrangements as *Per se* Patent Misuse

Section 271(d)(5) reads in relevant part as follows:

> No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having ... conditioned the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned.

35 U.S.C. § 271(d)(5).

As noted, complainant contends that 35 U.S.C. § 271(d)(5) eliminated patent misuse *per se* premised on tying arrangements. Respondents and the IA take the position that section 271(d)(5) did not eliminate patent misuse *per se* based on tying arrangements. Complainant further argues that, even apart from section 271(d)(5), Federal Circuit case law prohibits finding patent misuse *per se* based on a tying arrangement between two patent licenses. The IA argues that, even if section 271(d)(5) does not eliminate patent misuse *per se* based on tying arrangements, a tying arrangement between two patent licenses (as opposed to a tying arrangement between a patent license and a product) should not be deemed patent misuse *per se*.

We conclude, as did the ALJ that under section 271(d)(5) an infringement action may be precluded by a patent misuse defense based on a patent tying arrangement that is found to be illegal *per se*. Pursuant to section 271(d)(5), the defense requires a finding of market power based on an analysis that includes an inquiry into whether substitutes for the patented product are available.

Section 271(d)(5) expressly refers to conditioning a patent license on (1) the purchase of a separate product or (2) the acquisition of another patent license. Thus, it encompasses both patent-product and patent-patent tie-ins with respect to a defense of patent misuse based on tying arrangements. In *Virginia Panel Corp. v. MAC Panel Co.*, the Federal Circuit reversed a district court's conclusion that a proposed licensing agreement conditioned on the prospective licensee's purchase of unpatented products constituted patent misuse. 133 F.3d 860, 868 (Fed. Cir. 1998). The Federal Circuit outlined the approaches to the analysis of patent misuse issues as follows:

The courts have identified certain specific practices as constituting *per se* patent misuse including so-called "tying" arrangements in which a patentee conditions a license under the patent on the purchase of a separable, staple good, *See, e.g., Morton Salt Co.* [*v. G.S. Suppiger Co.*], 314 U.S. [488,] 491 [(1942)], and arrangements in which a patentee effectively extends the term of its patent by requiring post-expiration royalties, *See, e.g., Brulotte v. Thys Co.*, 379 U.S. 29, 33 (1964). Congress, however, has established that other specific practices may not support a finding of patent misuse. *See* 35 U.S.C. § 271(d) (1994); *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 202 (1980) (construing earlier version of § 271(d)). A 1988 amendment to § 271(d) provides that, *inter alia*, in the absence of market power, even a tying arrangement does not constitute patent misuse. *See* 35 U.S.C. § 271(d)(5) (1994) (added by Pub. L. No. 100-703, § 201, 102 Stat. 4676 (1988)).

When a practice alleged to constitute patent misuse is neither *per se* patent misuse nor specifically excluded from a misuse analysis by § 271(d), a court must determine if that practice is "reasonably within the patent grant, *i.e.*, that it relates to subject matter within the scope of the patent claims." *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 708 (Fed. Cir. 1992). If so, the practice does not have the effect of broadening the scope of the patent claims and thus cannot constitute patent misuse. *Id.* If, on the other hand, the practice has the effect of extending the patentee's statutory rights and does so with an anti-competitive effect, that practice must then be analyzed in accordance with the "rule of reason." *Id.* Under the rule of

> reason, "the finder of fact must decide whether the questioned practice imposes an unreasonable restraint on competition, taking into account a variety of factors, including specific information about the relevant business, its condition before and after the restraint was imposed, and the restraint's history, nature, and effect." *State Oil Co. v. Kahn*; 118 S. Ct. 275, 279 (1997) (citing *Arizona v. Maricopa County Med. Soc.*, 457 U.S. 332, 343 & n.13 (1982)).

133 F.3d 860, 869 (Fed. Cir. 1997) (parallel citations omitted). In the above-quoted passage, the Federal Circuit recognized that the conditioning of a patent license on the purchase of a separable, staple good was a tying arrangement that constituted *per se* patent misuse, and that section 271(d) added a market power requirement.[5] Thus, the Federal

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[5]As to the proposed licensing arrangement that was alleged to constitute patent misuse in *Virginia Panel*, the court stated that the patentee's "proposal to the [prospective licensee] was not a consummated tying arrangement and for that reason was not *per se* patent misuse." 133 F.3d at 871. The Federal Circuit explained that, unlike the tying cases on which defendant-appellant relied, the patentee and prospective licensee "never entered into any license agreement that required [the prospective licensee] to purchase unpatented, staple goods. *See* 35 U.S.C. § 271(d)(5) (by implication, limiting tying arrangements to the conditioning of an actual license or sale of the patented product)." 133 F.3d at 871. Having determined that the license proposal at issue was not *per se* patent misuse as a tying arrangement, the court went on to that portion of the misuse analysis outlined *supra* that could lead to a rule of reason inquiry: "Furthermore, because [the patentee], on the advice of counsel, voluntarily and unilaterally revoked the proposal to link the license to the purchase of unpatented items, [the patentee's] activities did not extend the scope of its patent rights. Accordingly, we conclude that [the patentee's] truncated negotiations with [the prospective licensee] did not constitute patent misuse." 133 F.3d 871.

Circuit has concluded that section 271(d) did not eliminate *per se* patent misuse.

In support of its argument that the *per se* rule for patent misuse based on tying was eliminated by section 271(d)(5), complainant relies on the legislative history of the statute and a district court case, *Texas Instruments Inc. v. Hyundai Electronics Industries, Co.*, 49 F. Supp.2d 893 (E.D. Tex. 1999)). Complainant submits that the statute adds not just a market power test, but also a rule-of-reason balancing of anticompetitive and pro-competitive effects test. In *Texas Instruments*, the district court dismissed *Virginia Panel* as "merely recogniz[ing] that the courts have *historically* identified tying practices as constituting *per se* patent misuse." 49 F.Supp.2d at 910. (The district court did not address the discussion in *Virginia Panel* of the licensing proposal at issue.) The district court then discussed the legislative history of section 271(d)(5) as follows:

> [Section] 271(d)(5) specifically notes that patent misuse tying analysis is to be considered "in view of the circumstances," strongly suggesting that rule-of-reason analysis - not *per se* analysis - applies. According to the Supreme Court, when conducting a rule-of-reason analysis, "the factfinder weighs *all of the circumstances of a case* in deciding whether a restrictive practice should be prohibited as imposing an unreasonable restraint on competition." *Continental T.V. v. GTE Sylvania*, 433 U.S. 36, 49, 97 S.Ct. 2549, 2557, 53 L.Ed.2d 568 (1977) (emphasis added); *accord National Soc'y of Professional Engineers v. United States*, 435 U.S. 679, 690, 98 S.Ct. 1355, 55 L.Ed.2d 637 (1978).

49 F.Supp.2d 893 at 910-11. The district court quoted from remarks by Rep. Kastenmeier and Senators DeConcini and

Leahy, including their discussions of the phrase "in view of the circumstances." 49 F.Supp.2d at 911-12. It found that the remarks expressed an intent to eliminate *per se* rules due to tying, and that "[n]o contrary statement appears in the legislative history of Section 271(d)(5)." 49 F.Supp.2d at 912.

The Federal Circuit recently stated in *International Business Machines Corp. v. United States*, 201 F.3d 1367 (Fed. Cir. 2000), that statutory interpretation "begin[s] with the language of the statute itself. If that language is clear and unambiguous, then it controls, and we need not - indeed we may not - go further." 201 F.3d at 1372 (2000). In deciding whether the language is clear and unambiguous, a court looks to "the language itself, the specific context in which that language is used, and the broader context of the statute as a whole." *Robinson v. Shell Oil Co.*, 519 U.S. 337, 341 (1997).

Section 271(d)(5) states that "[n]o patent owner otherwise entitled to relief for infringement . . . of a patent shall be . . . deemed guilty of misuse . . . by reason of his having . . . conditioned the license of any rights to the patent . . . on the acquisition of a license to rights in another patent or purchase of a separate product, unless, *in view of the circumstances*, the patent owner has market power in the relevant market for the patent . . . on which the license . . . is conditioned." 35 U.S.C. § 271(d)(5) (emphasis added). The Federal Circuit has stated that undefined terms in a statute are deemed to "have their ordinary meaning, for which [one] may consult a dictionary." *IBM*, 201 F.3d at 1372. *The American College Dictionary* defines "in view of" as "in consideration of."[6] The same dictionary defines

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[6] *The American College Dictionary* 1356 (Random House 1970) ("view ... 17. in view of, a. in sight of. b. in prospect or anticipation of. c.

"circumstance" as "a condition, with respect to time, place, manner, agent, etc., which accompanies, determines, or modifies a fact or event." *Id* at 219; *accord Black's Law Dictionary* 243 (6th ed. 1990) ("Circumstances. Attendant or accompanying facts, events or conditions. Subordinate or accessory facts; *e.g.* evidence that indicates the probability or improbability of an event"). Thus, in the context of section 271(d)(5), the phrase "in view of the circumstances" means "in consideration of the accompanying facts or conditions that determine whether" "the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned."[7] Because the language of section 271(d)(5) is not ambiguous and the statutory scheme is coherent (*see Virginia Panel*, 133 F.3d at 869), we decline to follow *Texas Instruments Inc. v. Hyundai Electronics Industries Co.*, 49 F. Supp.2d 893, 912 (E.D. Tex. 1999)) (relying on legislative history to adopt an interpretation of section 271(d)(5) that is contrary to its plain meaning).[8] We are guided instead by the Federal Circuit's analysis of patent misuse, as articulated in *Virginia Panel*, 133 F.3d at 869, 871.

B. Applicability of *Per se* Analysis to Package Licensing and Pooling Arrangements

Relying on *Standard Oil Co. v. United States*, 283 U.S. 163, 171, 174, 175 (1931), and *Broadcast Music, Inc. v.*

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in consideration of. d. on account of").

[7]As respondents note, where the intent of a statute is to overrule prior common law, that statutory purpose must be clear. United States v. Texas, 507 U.S. 529, 534 (1993). Such is not the case here.

[8]We also do not rely on the ALJ's discussion of the legislative history of section 271(d)(5) set forth in the ID at 150.

Columbia Broadcasting System, Inc., 441 U.S. 1, 24-25 (1979), complainant also argues that a *per se* analysis is inapplicable because the Supreme Court has instead used a rule of reason analysis in evaluating patent pools and package licenses. In *Standard Oil*, the Supreme Court recognized that the cross-licensing and division of royalties from blocking patents could be procompetitive. 283 U.S. at 171. The Court also "examine[d] the evidence to ascertain the operation and effect" (283 U.S. at 175) of certain agreements for cross-licensing and division of royalties between patentees of "competing patented processes" (283 U.S. at 175, 180-81). However, *Standard Oil* did not discuss any tying allegations. Although complainant asserts that *Standard Oil* involved "a license that offered a package of patents and did not permit licensees to select which patents they preferred" (complainant's submission at 45 (citing *Standard Oil*, 283 U.S. at 174)), its citation does not support that statement. See also *Standard Oil*, 283 U.S. at 170 ("There is no provision in any of the agreements which restricts the freedom of the primary defendants individually to issue licenses under their own patents alone or under the patents of all the others; and no contract between any of them, and no license agreement with a [manufacturer of the product] executed pursuant thereto, now imposes any restriction upon the quantity of gasoline to be produced, or upon the price, terms, or conditions of sale, or upon the territory in which sales may be made. The only restraint thus charged is that necessarily arising out of the making and effect of the provisions for cross-licensing and for division of royalties.") Thus, *Standard Oil* does not preclude a *per se* analysis for tying arrangements.

The Supreme Court opinion in *Broadcast Music* also did not involve allegations of tying. Although the licensee (CBS) argued below that the blanket license at issue was an illegal tying arrangement, the district court rejected the tie-in

argument because "direct negotiation with individual copyright owners is available and feasible." Broadcast Music, 441 U.S. at 6 (citing 400 F.Supp. 737, 781-83 (S.D.N.Y. 1975)). The Second Circuit affirmed the rejection of the tying argument. 562 F.2d 130, 135 (2d Cir. 1977). CBS did not petition for a writ of certiorari on that issue. *Broadcast Music*, 441 U.S. at 6-7, 25 n.43.

Complainant asserts that "the Federal Circuit has prohibited application of the *per se* misuse doctrine unless the practice at issue has been held to be *per se* illegal by the [Supreme] Court."[9] However, the Supreme Court has recognized that tying arrangements may be anticompetitive *per se*. *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2 (1984); *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488, 491 (1942); *see also Mallinckrodt v. Medipart Inc.*, 976 F.2d 700, 706, 708 (Fed. Cir. 1992) (holding that district court contravened *Windsurfing* precedent, but stating that "this is not a price-fixing or tying case, and the *per se* antitrust and misuse violations found in [*Bauer & Cie v. O'Donnell*, 229 U.S. 1 (1913); *Straus v. Victor Talking Machine Co.*, 243 U.S. 490 (1917); *Boston Store of Chicago v. American Graphophone Co.*, 246 U.S. 8 (1918)] and *Motion Picture Patents Co.* [*v. Universal Film Mfg.* Co., 243 U.S. 502 (1917)] are not here present"). We recognize that the particular facts in the patent misuse cases involve a tying patent and a tied *product*, rather than a tying patent and a tied *patent*. However, finding patent misuse based on a tying

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[9]Complainant's submission at 47 (relying on *Windsurfing International, Inc. v. AMF, Inc.*, 782 F.2d 995, 1001 (Fed. Cir. 1986) ("[t]o sustain a misuse defense involving a licensing arrangement not held to have been *per se* anticompetitive by the Supreme Court, a factual determination must reveal that the overall effect of the license tends to restrain competition unlawfully in an appropriately defined relevant market" (footnote omitted)).

arrangement between patents in a mandatory package license is a reasonable application of Supreme Court precedent.

More than thirty years before *Broadcast Music*, the Supreme Court held that the "block booking"[10] of copyrighted films was illegal *per se*. Thus, the Supreme Court has held the practice of mandatory package licensing of intellectual property illegal *per se*. The Court stated that "[w]e do not suggest that films may not be sold in blocks or groups, when there is no requirement, express or implied, for the purchase of more than one film. All we hold to be illegal is a refusal to license one or more copyrights unless another copyright is accepted." *United States v. Paramount Pictures, Inc.*, 334 U.S. 131, 159 (1948). In *Broadcast Music*, in contrast, "[t]he [d]istrict [c]ourt found that there was no legal, practical, or conspiratorial impediment to [the licensee's] obtaining individual licenses; [the licensee], in short, had a real choice." 441 U.S. at 24.

The IA and complainant urge the Commission to follow the lead of the DOJ Antitrust Division and use the rule of reason approach to evaluating package licenses that involve patent tying arrangements. The *Antitrust Guidelines for the Licensing of Intellectual Property* state that "[p]ackage licensing - the licensing of multiple items of intellectual property in a single license or in a group of related licenses - may be a form of tying arrangement if the licensing of one product is conditioned upon the acceptance of a license of another, separate product." U.S. Dep't of

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[10]Block-booking is the practice of licensing, or offering for license, one feature [film] or group of features on condition that the exhibitor will also license another feature or group of features released by the distributors during a given period." *United States v. Paramount Pictures, Inc.*, 334 U.S. 131, 156 (1948).

Justice & FTC, *Antitrust Guidelines for the Licensing of Intellectual Property* § 5.3 (1995) ("DOJ/FTC Antitrust Guidelines"). The DOJ/FTC Antitrust Guidelines state that "[i]f a package license constitutes a tying arrangement, the [DOJ and FTC] will evaluate its competitive effects under the same principles they apply to other tying arrangements." DOJ/FTC Antitrust Guidelines § 5.3. The DOJ/FTC Antitrust Guidelines also state that the DOJ will apply the rule of reason standard in deciding whether to challenge a tying arrangement:

> *In the exercise of their prosecutorial discretion,* the Agencies will consider both the anticompetitive effects and the efficiencies attributable to a tie-in. The Agencies would be likely to challenge a tying arrangement if: (1) the seller has market power in the tying product, (2) the arrangement has an adverse effect on competition in the relevant market for the tied product, and (3) efficiency justifications for the arrangement do not outweigh the anticompetitive effects. The Agencies will not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner.

DOJ/FTC Antitrust Guidelines § 5.3 (footnotes omitted) (emphasis added). Given the DOJ's acknowledgment that its standard is a matter of prosecutorial discretion, the DOJ's choice of the rule of reason standard for its antitrust investigations provides little guidance on the standard that we should apply in this investigation; however, it indicates that a *per se* approach is valid.

Complainant argues that "it would be poor public policy to adopt a *per se* approach that condemns all package licenses if market power is found." Complainant's submission at 47. It asserts that a mandatory package license

of all patents in a pool may have no anticompetitive effects at all, while offering the well-recognized benefits of reduced transaction costs and reduced uncertainty concerning the rights needed to manufacture a product. Complainant is correct that a *per se* approach condemning *all* mandatory patent license packages is unwarranted because licensing blocking patents as a package is pro-competitive. The application of the *per se* patent misuse doctrine to tying arrangements in a mandatory package license would not, however, encompass blocking patent complexes so long as the traditional separate product requirement, discussed in part C, *infra*, is retained. *International Manufacturing Co. v. Landon*, 336 F.2d 723 (9th Cir. 1964).

The IA opposes even such a narrowly crafted *per se* rule. He suggests that, in the hypothetical situation "where 20 patentees, some of which refuse to license their blocking patents separately, have properly pooled into a mandatory package license 200 essential patents but have errantly included a single nonessential patent along with the essential ones," it would be improper to find patent misuse *per se* because "the anticompetitive effects of wrongly adding the one nonessential patent to the pool may be outweighed by the procompetitive effects of the arrangement, *e.g.*, reducing the transaction costs that would result if a licensee had to negotiate contracts with each licensee and avoiding a `hold-out' situation where certain patent holders refuse to license their patents alone." IA's submission at 15-16. We do not find the IA's hypothetical persuasive, however, because it is not necessary to eliminate the package license in his hypothetical altogether in order to avoid patent misuse. All that is necessary is to provide potential licensees with a backstop - the choice of individually licensing the patents;

there is nothing wrong with offering the package license as an option, rather than as a requirement.[11]

Relying on *Jefferson Parish*, complainant urges us to examine the competitive consequences of the challenged conduct. The character of the potential harm flowing from including, in a mandatory package license of blocking patents, an extra patent license that is not necessary to use the blocking patents is widely recognized, *viz.*, the suppression of emerging technologies that compete with the technology covered by the extra patent license. CX-358 at

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[11]Complainant cites no authority for the proposition that tying is "inherent" in a pool license (Complainant's submission at 47). The DOJ Antitrust Division MPEG-2 business review letter states that -

> [a]lthough it offers the Portfolio patents [*viz.*, the patents identified as essential to compliance with the video and/or systems parts of the MPEG-2 standard] only as a package, the Portfolio license does not appear to be an illegal tying agreement. The conditioning of a license for one intellectual property right on the license of a second such right could be a concern where its effect was to foreclose competition from technological alternatives to the second. In this instance, however, the essentiality of the patents - determined by the independent expert - means that there is no technological alternative to any of them and that the Portfolio license will not require licensees to accept or use any patent that is merely one way of implementing the MPEG-2 standard, to the detriment of competition. *Moreover, although a licensee cannot obtain fewer than all the Portfolio patents from MPEG LA, the Portfolio license informs potential licensees that licenses on all the Portfolio patents are available individually from their owners or assignees. While the independent expert mechanism should ensure that the Portfolio will never contain any unnecessary patents, the independent availability of each Portfolio patent is a valuable failsafe.*

CX-355 at 11 (emphasis added).

10; CX-357 at 9; CX-355 at 11. As the Supreme Court noted in *Jefferson Parish*:

> There is general agreement in the cases and among commentators that the fundamental restraint against which the tying proscription is meant to guard is the use of power over one product to attain power over another, or otherwise to distort freedom of trade and competition in the second product. This distortion injures the buyers of the second product, who because of their preference for the seller's brand of the first are artificially forced to make a less than optimal choice in the second. And even if the customer is indifferent among brands of the second product and therefore loses nothing by agreeing to use the seller's brand of the second in order to get his brand of the first, such tying agreements may work significant restraints on competition in the tied product.

Jefferson Parish, n.19 (quoting *Fortner Enterprises v. United States Steel Corp.*, 394 U.S. 495, 512-514 (1969) (dissenting opinion)). The inclusion of the extra, unneeded patent in the package with the blocking patents could foreclose competing technologies from use by manufacturers licensed under the package; because the manufacturers would obtain the unneeded patent with the package they might choose not to license any of the competing technologies. CX-358 at 10; CX-357 at 9; CX-355 at 11.[12]

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[12]The principal objective of the U.S. patent system is the promotion of the progress of science and the useful arts. *U.S. Const.* art. I., § 8; *U.S. v. Masonite Corp.*, 316 U.S. 265, 278 (1942). The suppression of emerging technology is directly contrary to that purpose.

Thus, for the reasons discussed above, we conclude that patent misuse *per se* may be based on a tying arrangement between two patent licenses.

C. Legal Standard for Demonstrating Patent Misuse *Per se* Based on a Tying Arrangement Between Patent Licenses

As discussed *supra*, we have concluded that patent misuse *per se* may be based on a tying arrangement between two patent licenses. In *Senza-Gel Corp. v. Seiffhart*, 803 F.2d 661 (Fed. Cir. 1986), the Federal Circuit affirmed a grant of summary judgment on a defense of patent misuse *per se* premised on a patent-product tying arrangement. (*Senza-Gel* pre-dates enactment of section 271(d)(5).) In finding patent misuse, the *Senza-Gel* district court employed a three-step analysis, *viz*, (1) whether two separable items are tied, (2) whether the tied item is a staple in commerce, and (3) whether the two items are tied in fact. The district court certified as a question for interlocutory appeal whether its three step analysis was proper for analyzing a patent misuse claim in the tying context. The Federal Circuit found "no impropriety in the district court's employment of the three-step analysis," although the Federal Circuit "caution[ed] that [it was] not ... explicating all of the analytical parameters that may be applicable to patent misuse questions in future cases." 803 F.2d at 665. Complainant argues that, in addition to the market power requirement imposed by section 271(d)(5), to establish a tying arrangement in the patent misuse context, a proponent must also establish each of the three *Senza-Gel* elements.

Respondents assert that "[a] tying arrangement in patent licensing constitutes *per se* patent misuse where (1) the patentee has market power in a market for licensing certain essential patents (which the licensee may want to

license), and (2) conditions the licensing of those patents on the acceptance of a license to other nonessential patents (which the licensee may not want to license)." Respondents' submission at 9. Respondents contend that not all mandatory package licenses are unlawful tying arrangements that would be subject to the *per se* rule. Relying on *Jefferson Parish*, respondents assert that "[t]ying only arises where the parties include in the pool *both* an item in which they legitimately have market power (*e.g.*, essential patents), and an item for which competition on the merits would otherwise occur (*e.g.*, nonessential patents), and refuse to offer a legitimate choice of obtaining each item separately." Respondents' reply at 25-26, 29 ("if only essential patents are 'tied' together in a single package, then the arrangement does not implicate the *per se* rule"). Respondents assert that because "'[n]onessential' patents by definition are not necessary to practice the Orange Book standard" "there could be competition among nonessential technologies." Respondents' reply at 5. Citing *Jefferson Parish*, they assert that the *per se* prohibition against tying protects competition by ensuring that it not be suppressed by leveraging the market power in the essential patents by tying the essential to nonessential patents.

We agree that establishing patent misuse *per se* based on a tying arrangement between patent licenses requires establishing both market power pursuant to section 271(d)(5) and conditioning (*i.e.*, the patent licenses are tied in fact). We disagree with respondents' position that the antitrust market demand standard should be used to determine whether the "tying" and "tied" patents are separate items. The Federal Circuit stated in *Senza-Gel* that "[t]he law of patent misuse in licensing need not look to consumer demand (which may be non-existent) but need look only to the nature of the claimed invention as the basis for determining whether a product is a necessary concomitant of the invention or an entirely separate product. The law of

antitrust violation, tailored for situations that may or may not involve a patent, looks to a consumer demand test for determining product separability." 803 F.2d at 670 n.14.

We conclude that the second prong of the three-prong *Senza-Gel* analysis, *viz.*, whether the tied product is a staple in commerce, is inapplicable to tying arrangements between two patent licenses. In approving the three-prong standard applied by the district court to the patent-product tying arrangement at issue in *Senza-Gel*, the Federal Circuit cited *Dawson Chemical Co. v. Rohm & Haas Co.*, 448 U.S. 176 (1980). *Dawson Chemical* involved a process patent on a method of using the chemical propanil as an herbicide. 448 U.S. 176,181-82 (1980). Before the Supreme Court, the petitioners did not dispute that their manufacture and sale of propanil with instructions for using it as an herbicide was contributory infringement of the patent under 35 U.S.C. § 271(c), but they raised the defense of patent misuse. 448 U.S. at 185-86. Section 271(c) defines contributory infringement, as follows:

> Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and *not a staple article or commodity of commerce suitable for substantial noninfringing use*, shall be liable as a contributory infringer.

35 U.S.C. § 271(c) (emphasis added). It was undisputed that propanil was a nonstaple article, *i.e.*, "one that has no commercial use except in connection with respondent's

patented invention." 448 U.S. at 184, 186-87. The conduct at issue was the patentee's practice of licensing its patented method (the tying patent) only to purchasers of propanil (the tied product).[13] 448 U.S. at 186, 214. The question was whether the patentee's activities were not patent misuse because they fell within the safe havens of section 271(d)(1)-(3).[14] The Supreme Court focused on the relationship between 35 U.S.C. § 271(c) and (d), and held that "the provisions of 271(d) effectively confer upon the patentee, as a lawful adjunct of his patent rights, a limited power to exclude others from competition in nonstaple goods." 448 U.S. at 201.

The IA argues that the three-prong test articulated in *Senza-Gel* in reliance on *Dawson* -

> is structured to ensure that a patentee accused of an illegal tie has not engaged in conduct that falls within the safe haven of section 271(d)(5). However, the test is inapplicable here because the tying of two patents can never fall within the safe haven. This follows from the unquestionable fact that a third party under 271(c) - the section that defines the breadth of the safe haven - can never be found liable for contributory infringement for licensing a patent that it owns.

IA's reply at 13. We agree with the IA that the act of licensing a patent does not implicate contributory

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[13]This was accomplished through an implied license. 448 U.S. at 186, 202.

[14]*Dawson* was decided prior to the Patent Misuse Reform Act of 1988, which enacted 35 U.S.C. §§ 271(d)(4),(5).

infringement under section 271(c). Thus, the staple/nonstaple distinction analyzed in *Dawson* would not be applicable to a patent-patent tying analysis, and that prong of the *Senza-Gel* analysis is not applicable here.

International Manufacturing Co. v. Landon, Inc., 336 F.2d 723 (9th Cir. 1964), while not binding precedent, is both on point and persuasive on the issue of applying the traditional separate product test (the first prong of the *Senza-Gel* analysis) in the context of patent-patent tie-ins is In that case, the Ninth Circuit held that the mandatory package licensing of blocking patents[15] was not patent misuse,

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[15]In discussing the first prong of the *Senza-Gel* analysis, *viz.*, "whether [the tied] product is a necessary concomitant of the invention or an entirely separate product" (803 F.2d at 670 n.14), complainant cites an unpublished Federal Circuit opinion (*Ricoh Co. v. Nashua Corp.*, 1999 WL 88969); *Broadcast Music Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1, 21 (1979); *Texas Instruments, Inc. v. Hyundai Electronics Industries Co.*, 49 F. Supp.2d 893, 913, 915 (E.D. Tex. 1999); and *Milliken Research Corp. v. Dan River, Inc.*, 739 F.2d 587, 594 (Fed. Cir. 1984). *Broadcast Music* is inapposite because, not only is it an antitrust case, it is not even an antitrust tying case. The district court opinion in *Texas Instruments* is not binding precedent on the Commission. As discussed in Part A, *supra*, we disagree with the district court's conclusion that the enactment of 35 U.S.C. § 271(d)(5) in the Patent Misuse Reform Act of 1988 eliminated the *per se* approach to patent tie-ins. We also disagree with the district court's conclusion that *Senza-Gel* has "limited, if any, significance after the Patent Misuse Reform Act of 1988." 49 F.Supp.2d at 915. The district court perceived an inconsistency between the language of section 271(d)(5), which refers to "condition[ing] the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a *separate product*," 49 F.Supp.2d at 914 (quoting 35 U.S.C. § 271(d)(5) (emphasis added by district court)), and the reference to "separable or inseparable items" in *Senza-Gel*, 803 F.2d at 664. The district court's reliance on this difference in language is problematic given the statement in *Senza-Gel* that "[t]he law of patent misuse in licensing .. . need look only to the nature of the claimed invention as the basis for determining whether a product is a necessary concomitant of the

distinguishing *American Securit Co. v. Shatterproof Glass Corp.*, 268 F.2d 769 (3d Cir. 1959), on the ground that the patents at issue in that case "could possibly be used independently without infringing one another."[16] 336 F.2d at 729. The Ninth Circuit reasoned that –

> it is not an unlawful tying arrangement for a seller to include several items in a single mandatory package when the items may be reasonably considered to constitute parts of a single distinct product. A license package containing blocking patents may be considered a single distinct product. By definition, blocking patents disclose interdependent parts of the same product. The product . . . is no less a single product because its novel aspects are disclosed by two interlocking patents. In such a case, not only is it not unreasonable to treat both patents as constituting a single product, but also licensing them in a package deal appears to be the most practical way of making them available for public use... .
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> * * *
>
> Appellants argue that mandatory package licensing of blocking patents should not be condoned because it may result in a prospective licensee being

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invention or an *entirely separate product.*" 803 F.2d at 670 n.14 (emphasis added).

[16]The Ninth Circuit went on to state that "[t]he evil of mandatory package licensing in *[Shatterproof Glass]* was that the prospective licensee, in order to obtain a license under one patent, would be compelled to accept licenses under patents that were not necessarily needed. The same evil does not arise in mandatory package licensing of blocking patents. In such a case, the prospective licensee is being compelled to accept no more than he would, in any event, have to obtain in order to make worthwhile a license under any of the patents." 336 F.2d at 729-30.

> compelled to accept an entire license package - thought by its owner to contain only interlocking patents - even though the licensee believes that he can produce a commercially feasible product under only part of the license package.
>
> This argument is premised on a hypothetical set of facts not involved in our case. *If we had a case where the licensee could produce a commercially acceptable product utilizing one patent but not infringing the others in the package, then clearly we would not have a case involving blocking patents. That we do not have such a hypothetical case is confirmed by the fact that appellants have not attempted to show what kind of device could be made under one of the patents in this case without violating the other. It is further confirmed by the fact that the product that the appellants did in fact manufacture infringed both patents.*

336 F.2d at 730-31 (emphasis added) (footnote omitted). The Ninth Circuit noted that there was testimony that "possibly a structure can be made" that would infringe one patent without infringing the other, but found that the testimony "dealt with hypothetical possibilities insofar as physical structure is concerned, and not with any practical use which could be made of the structure." 336 F.2d at 731 n.5.

Thus we conclude that, in addition to the market power requirement imposed by section 271(d)(5), to establish a tying arrangement between patent licenses in the patent misuse context, a proponent must prove the first and third requirements of the *Senza-Gel* analysis, *viz.*, that the "tying" and "tied" patent licenses are "separate" and tied in fact.

D. The Licensing Arrangements Are Patent Misuse *Per se* as a Tying Arrangement

The "tying" patent licenses are licenses for U.S. patents that are actually essential for the manufacture of CD-R/RWs in accordance with Orange Book standards, and the "tied" patent licenses are licenses for U.S. patents that the licensors have identified as "essential" but that are actually nonessential for the manufacture of CD-R/RWs. For the reasons discussed below, we conclude that each of the patents asserted in this investigation is unenforceable for patent misuse. In section 1, *infra*, we discuss the market power requirement of section 271(d)(5). The first and third prongs of the three-prong *Senza-Gel* test, *viz.*, the requirements that the "tying" and "tied" patent licenses be tied in fact and separate, are discussed in sections 2 and 3, *infra*.

We conclude that in the Philips-only CD-RW license (*e.g.*, CX-469C; FF 71, 72), licenses to the U.S. patents that are actually essential for the manufacture of CD-RWs in accordance with Orange Book standards (the "tying" patent licenses) are tied in fact to a license to the Farla '692 patent (the "tied" patent license), that the market power requirement of section 271(d)(5) is met, and that the Farla '692 patent is "separate" from the tying patents.

We also conclude that in the Philips-only CD-RW license (*e.g.*, CX-469C; FF 71, 72), licenses to the U.S. patents that are actually essential for the manufacture of CD-RWs in accordance with Orange Book standards (the "tying" patent licenses) are tied in fact to a license to the Lockhoff '219 patent (the "tied" patent license), that the market power requirement of section 271(d)(5) is met, and that the Lockhoff '219 patent is "separate" from the tying patents. The Philips-only CD-RW license contains a list of so-called

essential patents in Exhibit B4, and every option under the license requires the licensee to "choose[]" to license those essential patents. CX-469C art. 1.10. The list of patents in Exhibit B4 includes each of the six asserted patents in this investigation,"[17] as well as the Farla '692 patent and the Lockhoff '219 patent. CX-469C, Exhibit B4 at 4, 5.

We conclude that in certain Philips-only CD-R licenses (*e.g.*, RX-872C) and in certain joint CD-R licenses (*e.g.*, 1999 Gigastorage CD-WO/MO Disc Agreement (RX-1832, RX-2024C, Trans. at 834), RX-755C), licenses to the U.S. patents that are actually essential for the manufacture of CD-Rs in accordance with Orange Book standards (the "tying" patent licenses) are tied in fact to a license to the Farla `692 patent[18] and to a license to the Lockhoff '219 patent (the "tied" patent licenses), that the market power requirement of section 271(d)(5) is met, and that the Farla

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[17]Because the essentiality of four of the six patents asserted in this investigation has not been challenged, those four patents (*viz.*, the '401 patent, the '856 patent, the '825 patent, and the '764 patent) are among the "tying" patents. The parties dispute whether two of the asserted patents (the Kramer '493 and the Kramer '209 patents) are essential. Either the Kramer patents are properly deemed "essential" or they are actually nonessential patents that should not have been included in the list of so-called essential patents. If the former, they are "tying" patents; if the latter, "tied" patents. In either case, the Kramer '493 and '209 patents are part of the tying arrangement, and therefore both patents should be found unenforceable for patent misuse.

[18]The ALJ found that the patents identified by the licensors as so-called "essential" patents have changed over time. *See, e.g.*, FF 104-06. He further found that some licensees are operating under license agreements that include nonessential patents. FF 78. The burden of demonstrating a purge of patent misuse rests on complainant and requires, *inter alia*, that licenses containing improper provisions must have expired, or at least that the improper provisions be removed. ID at 147 (citing cases).

'692 patent and the Lockhoff '219 patent are each "separate" from the tying patents. The list of so-called essential patents in certain Philips-only CD-R licenses (*e.g.*, RX-872C, PH 098381-82, 098404) includes each of the six asserted patents in this investigation, as well as the Farla '692 patent and the Lockhoff '219 patent.

We further conclude that in the 1999 Gigastorage joint CD-RW license (RX-903C), licenses to the U.S. patents that are actually essential for the manufacture of CD-RWs in accordance with Orange Book standards (the "tying" patent licenses) are tied in fact to each of the following "tied" patent licenses: a license to the Ricoh Iwasaki '149 patent; a license to the Sony Yamamoto '719 patent; a license to the Farla '692 patent; and a license to the Lockhoff '219 patent. We also conclude that each of these "tied" patents is "separate" from the tying patents, and that the market power requirement of section 271(d)(5) is met. The list of patents in Exhibit B5 of the license (RX-903C, PH002750-54) also includes each of the six asserted patents in this investigation, as well as each of the "tied" patents listed above.

1. The Market Power Requirement of Section 271(d)(5)

We find that the relevant market for analyzing market power is the United States market for licensing the essential U.S. patents for the manufacture of CD-R/RW discs in compliance with Orange Book standards, and adopt[19] the ALJ's market definition and market power analysis.[20]

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[19]We take no position on the ID's statement that "Philips, Sony, Taiyo Yuden, and Ricoh are horizontal competitors in the patent licensing market" (ID at 173), and also take no position on the statement that "the Philips CD-R and CD-RW patent pools constitute horizontal agreements among competitors" to control royalty rates (ID at 175)

Philips has market power in the United States market for licensing essential U.S. patents for the manufacture of

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[20]We disagree with complainant's contention that in excluding recordable/rewritable DVDs from the relevant product market, the ALJ shifted the burden of proof to complainant. Respondents' expert (Bratic) testified that recordable DVDs are not reasonably interchangeable with CD-Rs. Trans. (Bratic) at 1698:20-1701:2. He noted that a recordable DVD would not play in a CD player and that consumers typically paid ten times more for DVD players than for CD players. The ALJ could reasonably reject the conflicting opinion of complainant's expert (McCarthy) that DVDs were interchangeable with CD-R/RWs, and in the ID he explained his reasons for doing so. Thus, the burden of proof on this issue was not shifted to complainant.

Complainant asserts that Bratic was qualified by the ALJ over its objection "on the issue of patent misuse." Complainant's submission at 61 n38 (quoting Trans. at 1620). The ALJ stated as follows:

> I will accept Mr. Bratic as an expert in licensing practices and economic matters that pertain to licensing, and facts which indicate to him misuse. Now, I don't accept that as binding on me in any way or on the Commission in any way as to what the law is on misuse, but merely the opinion of a person who has had a lot of experience, obviously, in his views on what the market considers to be regular and normal and what appears to be abnormal.

Trans. at 1623:3-11; *see generally* 1620:1-1624:18. Complainant also asserts that "Bratic, an accountant, not an economist, has never before testified or been qualified to testify about relevant market definitions, market power or anticompetitive effects in relevant markets. (Bratic Tr. 1908-09.) For these and other reasons, Mr. Bratic was not qualified to testify on the definition of a relevant market, and it was error for the ALJ to adopt in whole Mr. Bratic's testimony." Complainant's submission at 61. Bratic testified that he had "testified on relevant markets and market definitions in many patent cases" (Trans. at 1909:13-14), and that he had "also testified on price erosion issues and the effects of anticompetitive behavior as they relate to price erosion in patent infringement matters" (Trans. (Bratic) at 1911:18--20). *See* Trans. (Bratic) at 1908-13;1610-19 (educational background and work experience).

CD-R/RWs according to Orange Book standards because, as the ALJ found, there are no close substitutes for CD-R/RWs (ID at 160-64); the relevant market for licensing essential CD-R/RW patents is coextensive with the relevant product market for CD-R/RWs because "manufacturers are constrained to enter into those licenses in order to make such unique products" (ID at 166-67); and licenses to at least some of the Philips patents are essential to the manufacture of CD-R/RWs (ID at 173). The ALJ did not, as complainant contends, erroneously presume that because complainant had a patent, it has market power. Identifying the "tying" patent licenses as licenses for U.S. patents that are essential for the manufacture of CD-R/RWs according to Orange Book standards, the ALJ's analysis demonstrates that the market power requirement of section 271(d)(5) is met.

2. Tied in Fact

To find patent misuse *per se* based on a tying arrangement between two patent licenses, in addition to finding that the market power requirement of section 271(d)(5) is met, we must also find that the "tying" and "tied" patent licenses are tied in fact. We find, as did the ALJ, that in the Philips-only CD-RW license (*e.g.*, CX-469C; FF 71, 72), licenses to the U.S. patents that are actually essential for the manufacture of CD-RWs in accordance with Orange Book standards (the "tying" patent licenses) are tied in fact to a license to the Farla `692 patent and are also tied in fact to a license to the Lockhoff `219 patent (the "tied" patent licenses).

The ALJ found that, for the Philips-only CD-R and CD-RW licenses, the package of so-called "essential" patents had to be taken as a whole and a licensee could not break up

the so-called "essential" patents by selecting only certain of the so-called "essential" patents to license individually. FF 69-73. Philips asserts that prospective licensees have been given the option to license patents individually. In support of this argument, Philips relies on the following language, which appears in several CD-RW joint licenses issued in 1999: "WHEREAS, Licensee understands, that Philips is willing to license *any one or more patent rights* for optical disc manufacturing, owned or controlled by Philips, whether within or outside of the CD-RW Standard Specification as defined hereafter and to disclose and make available the requested basic information, all on reasonable terms and conditions." CX-414C at 2 ("CD-RW Disc License Agreement" with [[ ]] (June 16, 1999)) (emphasis added).[21] Because complainant Philips has not identified *any* Philips-only CD-RW license, or *any* CD-R license (Philips-only or joint) that contains similar language, the cited language does not suggest that prospective licensees under the Philips-only CD-RW license or the CD-R licenses (Philips-only or joint) were given the option of licensing individual patents as opposed to being forced to take all of the so-called essential patents as found by the ALJ. FF 64, 69-72. Thus, in the Philips-only CD-RW license (CX-469C),

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[21] *Accord* CX-422C at 2 ("CD-RW Disc License Agreement" with [[ ]] (Dec. 21, 1999)); Philips' complaint appendix N, tab 10 ("CD-RW Disc Agreement" with [[ ]]](Feb. 12, 1999)); CX-420 C at 2 ("CD-RW Disc License Agreement" with Gigastorage Corporation (Oct. 12, 1999)); *see also* CX-412C at 2 ("CD-RW Recorder Agreement" with[[ ]](Feb. 12, 1999) ("WHEREAS, Licensee understands, that Philips is willing to license *any one or more patent rights* owned or controlled by Philips for optical recording equipment manufacturing, whether within or outside of the CD-RW Standard Specifications as defined hereinafter and to disclose and make available the requested basic information, all on reasonable terms and conditions") (emphasis added).

licenses to the "tying" patents, *viz.*, the U.S. patents that are essential to the manufacture of CD-RWs in accordance with Orange Book standards (and which appear on the list of so-called essential patents in the license) are tied in fact to licenses to patents that appear on the list of so-called essential patents even though those patents are *not* actually essential to the manufacture of CD-RWs (*e.g.*, the Farla `692 patent).

Relying on the ALJ's factual findings, FF 93 and FF 94, complainant contends that prospective licensees have always had the option of choosing to negotiate individual licenses. We disagree with complainant's interpretation because the supporting deposition testimony cited by the ALJ refers to single-licensor package licenses, rather than to individual licenses. FF 93 and 94 read as follows:

> FF 93: "The current joint CD-R disc license makes clear that interested manufacturers may opt to take out individual licenses under the relevant patents of each of Philips, Sony and Taiyo Yuden instead of a combined license.' *See, e.g.*, RX-992C (PH [076996]); CX-451C (p. 2); [Depo. Trans. (Van Dijk) at] 53-54."
>
> FF94: "The joint CD-RW disc license also makes clear to licensees that Sony, Ricoh, and Philips retain the right to separately license their patents rights related to CD-RW. *See, e.g.*, CX-436C (p.2)."

The Van Dijk deposition transcript cited by the ALJ in support of FF 93 discusses [[

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Trans. Depo. (Van Dijk) at 53:12 - 54:25. Although complainant also relies on additional testimony from the same deposition, that testimony lends no support to its contention:

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Trans. Depo. (Van Dijk) at 71:13 - 73:17. In addition to being inconsistent with the deposition testimony of Van Dijk, Philips' interpretation of FF 93 and FF 94 is also inconsistent with the ALJ's statement that "[m]anufacturers in the market for CD-R/RW discs are unable to negotiate a

reasonable royalty rate with Philips for only particular *blocking* patents for the purpose of making CD-R/RWs that comply with Orange Book standards" (ID at 182 n.111) (emphasis in the ID).

We find, based on the above, that licenses to each of the so-called "essential" patents are tied in fact in the Philips-only CD-RW and CD-R patent licenses, in that none of the so-called essential patents could be licensed individually for the manufacture of CD-RWs or CD-Rs apart from the package. We therefore find a tie in fact between the "tying" patent licenses (licenses for U.S. patents that are actually essential for the manufacture of CD-Rs or CD-RWs in accordance with Orange Book standards) and the "tied" patent licenses (licenses for so-called "essential" patents that are actually nonessential to the manufacture of CD-Rs or CD-RWs) in the Philips-only CD-RW and CD-R patent licenses.

With respect to the joint licenses for CD-R and CD-RW technology, we also find, based on the ALJ's findings and analysis, a tie in fact between the "tying" patent licenses (licenses for U.S. patents that are actually essential for the manufacture of CD-Rs or CD-RWs in accordance with Orange Book standard and the "tied" patent licenses (licenses for so-called "essential" patents that are actually nonessential to the manufacture of CD-Rs and CD-RWs). Prior to 2000, as the ALJ found, the option to license only the essential patents of a single licensor, such as Philips, was not available. ID at 177-78; Trans. (Smith) at 1423-24; FF 166-67, 369-74. The ALJ further found, however, that even when the Philips-only and other individual licensor packages became available in 2000, licensees continued operating under pooled license agreements that included nonessential patents and that, indeed, 80 percent of CD-R/RW licenses worldwide currently are licensed under the joint licenses,

while only 20 percent have a separate Philips-only license. FF 78, 95. The ALJ further found, as explained more fully below, that licensees were discouraged from purchasing the single licensor packages, as opposed to the joint license. Indeed, the ALJ specifically found that Philips offered no evidence that the anticompetitive effects of including many nonessential patents in the lists of essential patents in the CD-RJRW pools had dissipated. FF 602.

In support of its argument that prospective licensees have been given the option to license patents individually, complainant Philips notes that CX-414C ("CD-RW Disc License Agreement" with [[ ]] (June 16, 1999)) provides that "Philips is willing to license any one or more patent rights for optical disc manufacturing, owned or controlled by Philips, whether within or outside of the CD-RW Standard Specification." The record does not support complainant's argument. The quoted language also appears in the 1999 joint CD-RW license to Gigastorage (CX-420C at 2, FF 250). The ALJ heard testimony regarding negotiations concerning the 1999 Gigastorage licenses and found that Gigastorage was told that separate licenses from the licensors would be more expensive than a joint license, that separate licenses could not be converted to a joint license at a later date, and that the royalty rate was the same regardless of the number of patents used. FF 369-376. He found that manufacturers like Gigastorage were "forced to license technology that they do not want." ID at 194. We also note that the cited language is not present in more recent joint

CD-RW license agreements. *See, e.g.,* Philips' complaint confidential appendix N, tabs 1, 7, 16, 17, and 18.[22]

The ALJ found that "[w]hen Gigastorage discussed with Philips entering into the CD-R patent pool license agreement, Gigastorage did not believe it needed a license to every patent in the pool and inquired into obtaining a license to less than all of the patents on Philips' patent list. Gigastorage hoped that by eliminating some patents the royalty rate would be lower. Philips responded that the royalty is the same regardless of the number of patents used." FF 376. (citing Trans. (J. Chen) at 840:15-841:13, 848:4-11, 918:12-919:7. The ALJ also found that "the evidence of record shows that manufacturers know enough about the patents in the pools to realize that they are being forced to license technology that they do not want." ID at 194 (citing Trans. (J. Chen) 918:4-920:7); FF 439. The relevant testimony of Mr. Chen of Gigastorage reads as follows:

> Q: You had a copy of the license and the patent list before you entered into the license; is that right, sir?
>
> A: In the -
>
> Q: No, I'm just asking you, you had a copy of the license and the patent list before you entered into the license with Philips?

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[22]Appendix N is entitled "License Agreements of CD-RW Licensees." Tab 1 is "CD-RW Disc Patent License Agreement" with, [[ ]] (June 17, 2000). Tab 7 is "CD-RW Disc Patent License Agreement" with [[ ]](July 1, 2000). Tab 16 is "CD-RW Disc Patent License Agreement" with [[ ]] (June 16, 2000). Tab 17 is "CD-RW Disc Patent License Agreement" with [[ ]] (June 21, 2000). Tab 18 is "CD-RW Disc Patent License Agreement" with.[[ ]] (Sept. 25, 2000).

A: They give us, yes.

Q: And you didn't look at that patent list, did you?

A: Of course, yes. I just explained that. I will explain again. Before we signed the patent license, we have a patent list, because Philips offer us so-called standard joint license agreement to us, so of course, including the patent list. But in the patent list, there are over 100, over 100 patents. So - and also, there are a lot of irrelevant patents in the list, for example the CD audio, CD-ROM and CD-I, and also the CD-MO patent in the list. Of course, we have a list, and also, we expressed such opinion to Philips Taipei. So L have a phone call with Danny Lin. He's a manager of Philips Taipei who is in charge of patent licensing in Taiwan. I, on the phone, spoke with him regarding this issue, those patents we don't need, why they need to put in the list. But we got the answer I just explained. We got the answer, *even if you use one patent of the list or two or more, you still need to pay the same royalty rate, the same amount. So I have, before, we signed a joint license agreement.*

Q: Mr. Chen, I want to direct you to tab 2 of your binder, which is a copy of your deposition testimony, and direct your attention to page 158, line 13. Page 158, line 13.

A: Line 13.

Q: You testified at your deposition "I have looked at the patent list, this is an attachment to the agreement, and there are so many numbers that I didn't look at them in detail, and I remember there were over 100." Do you remember that testimony?

A: Yeah, that's my answer, right

JUDGE HARRIS: Yes, he remembers that.

BY MS. AQUINO: So you didn't look at the patents in detail; correct?

A: Yes. I also explained that we have a patent list, but we don't have the patent in very detail, but from the patent list, I remember in the deposition, I also explain to you, it's very easy to take a look in the list, there are different category for the patent. So at that time I explained to you they are CD audio, CD-ROM and CD-I and also the CD-MO in the patent list. So it's very obvious we don't need that, but in the detail, we don't have time, we don't have the manpower to go into the detail, and also, that's over 100 patents.

Trans. (J. Chen) at 918:4-920:7 (emphasis added).

Relying upon the italicized portion of the above-quoted testimony, complainant argues that, rather than demonstrating that Gigastorage could not choose the patents it wanted to license, the "testimony demonstrates only that

Philips was prepared to license whatever patents Gigastorage wanted, but that the royalty would not change." Complainant's submission on review at 84. The ALJ concluded, however, that the witness understood Philips' response as a rejection of Gigastorage's request to license fewer patents at a lower royalty (*i.e.*, the witness "realize[d] that [he was] being forced to license technology that [he did] not want" (ID at 194)), rather than as expressing a willingness to license individually the patents in the CD-R joint license. The ALJ is in the best position to evaluate trial testimony, and we believe his interpretation is the correct one.[23]

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[23]In support of its argument that it "is willing to negotiate licenses under whatever patent a licensee chooses" (Complainant's submission on review at 81), complainant also cites the following hearing testimony of Brian Wieghaus, complainant's general manager of optical licensing in North America:

> Q: What is Philips's policy with respect to offering its patents for use other than in the field of use of a joint licensing program?
>
> A: Essentially, it's negotiable.
>
> Q: What is Philips's policy with respect to offering individual patents for license?
>
> A: Again, it's negotiable.

Trans. at 305. However, the testimony of Wieghaus that precedes the above-quoted excerpt concerns unusual nonstandard optical products in niche fields. Trans. (Wieghaus) at 303-05. Thus, rather than being directed to licensing patents for use in implementing the CD-R/RW standard, the question relates to negotiations for the use of patents in such non-standard fields. The Wieghaus testimony therefore provides no support for complainant's contention that prospective CD-R/RW manufacturer licensees had the option of obtaining licenses to individual patents.

As discussed above, we find, as did the ALJ, that licensees are, unable license individual patents but must take a license to all of the so-called "essential" patents. The availability of single-licensor package licenses would negate a tie in fact in the joint license between so-called essential patents that are owned by different licensors because the licensee has the option of single-licensor packages from each of the different licensors. The ALJ found, however, that Philips-only package licenses did not become available until 2000. ID at 177-78; Trans. (Smith) at 1423-24; FF 166-67, 369--74. We affirm his finding that the option to license only the essential patents of a single licensor under a single-licensor package license, as opposed to licensing every one of the so-called essential patents of every one of the licensors under a joint license, was not available earlier. We therefore find, in the joint licenses negotiated prior to that point in time, a tie in fact between the "tying" patent licenses (licenses for U.S. patents that are actually essential for the manufacture of CD-Rs or CD-RWs in accordance with Orange Book standards) and the "tied" patent licenses (licenses for so-called "essential" patents that are actually nonessential to the manufacture of CD-Rs or CD-RWs) regardless of ownership. In the joint licenses negotiated after that point in time, we find a tie in fact between the "tying" patent licenses (licenses for U.S. patents that are actually essential for the manufacture of CD-Rs or CD-RWs in accordance with Orange Book standards) and the "tied" patent licenses (licenses for so-called "essential" patents that are actually nonessential to the manufacture of CD-Rs or CD-RWs) owned by the same licensor.

3. Separability

As discussed in the previous section, we find that in the Philips-only CD-RW license (*e.g.*, CX-469C; FF 71, 72),

licenses to the U.S. patents that are actually essential for the manufacture and sale of CD-RWs in accordance with Orange Book standards (the "tying" patent licenses) are tied in fact to a license to the Farla `692 patent (the "tied" patent license). We affirm the ALJ's finding that the Farla '692 patent, which is included in the Philips-only CD-RW patent license as a so-called "essential" patent, is actually nonessential to the manufacture of CD-RWs (or CD-Rs) according to Orange Book standards.[24]

Complainant asserts that "[t]here is no evidence or finding that any pooled patent is not infringed by the making of an Orange Book disc." Complainant's submission at 78. It notes that -

> [t]he ALJ's conclusion regarding which patents are "essential" and which patents should or should not be pooled together - based ... on a standard that ignores whether patents are actually infringed - has no applicability to the law of patent misuse based on tying which examines whether the alleged tied products are separate products by looking at the nature of the invention to determine whether the product is a "necessary concomitant of the invention." *See Senza-Gel*, 803 F.2d at 670 n.14. Whatever may be said of the ALJ's determination of

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[24]ID at 201-05. The ALJ found that the Farla '692 patent "was included in the CD-R license agreement for many years before it was removed from the list of essential patents in 2001." ID at 204 (citing RX-840, RX-778, RX-755, RX-914). He also found that "at least as of a license agreement signed in January 2002, the Farla `692 patent was still being listed as an essential patent under the CD-RW license agreement." ID at 204 (citing RX-770 at PH087634). As pointed out by the IA, the following additional CD-RW licenses also include the Farla `692 patent: RX-766 at PH087728, RX-773 at PH088934.

> essentiality, it was not based on what patent the licensee needs or infringes in making a licensed product.

Complainant's submission at 78 n.52 (citations omitted). We disagree with complainant's contentions, and find that the Farla `692 patent is "separate" from the tying patents.

The ALJ found that "[l]icenses to at least some of the Philips patents are essential to the manufacture of CD-R/RWs that are in technical and practical compliance with the Orange Book." ID at 173; FF 222. Contrary to complainant's contentions, the record in this investigation establishes that a licensee could produce an Orange Book compliant CD-R or CD-RW disc (using the so-called "essential" patents that are actually essential) without infringing the Philips Farla '692 patent.[25] The evidence supporting this finding is the testimony of respondents' expert (McLaughlin).[26]

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[25]As discussed in Part C, supra, the mandatory package licensing of blocking patents is not patent misuse *per se* because such patents may be considered to be a single product. As the Ninth Circuit stated in *International Manufacturing Co. v. Landon, Inc.*, 336 F.2d 723, 731 (9th Cir. 1964), 'where the licensee could produce a commercially acceptable product utilizing one patent but not infringing the others in the package, then clearly we would not have a case involving blocking patents."

[26]Respondents assert that in appendix B of complainant's submission on review, complainant for the first time challenges the opinion of its expert (McLaughlin) as to the essentiality of specific patents, raising arguments that were never presented to the ALJ Respondents concede, however, that the appendix also "discusses factual or legal issues that may have been raised before the ALJ." Respondents' reply at 78. The Commission need not consider arguments raised by complainant in appendix B of its submission on review challenging the patent-by-patent essentiality opinion testimony of respondents' expert

Complainant generally asserts that the testimony of respondents' expert (McLaughlin) is not evidence that alternative technologies exist that do not infringe the patents. It notes that McLaughlin testified on cross-examination that he was "not intimately familiar with the term infringement," and asserts that "the ALJ refused to permit [complainant's counsel] to question Dr. McLaughlin on the importance of an infringement analysis in determining essentiality, stating that [the ALJ said that] `this expert's task was not to consider the question of infringement but to consider the question of essentiality.'" Complainant's reply at 29 n.24 (quoting Trans. at 1583). While McLaughlin stated that he was "not intimately familiar with the term `infringement,' we do not believe that this means that his testimony is incompetent that certain patents (including, *e.g.*, the Farla '692 patent) do not "cover" Calimetrics' alternative OPC and write strategy technology.[27] This is because in his testimony McLaughlin compared an exemplary claim in the patent at issue and explained why the technology was not covered. The hearing testimony cited by complainant does not suggest that the ALJ prevented complainant from questioning McLaughlin about his findings concerning those patents on cross-examination.

The ALJ found that the "claims of the Farla `692 patent are directed to a particular method of carrying out a strategy for writing data, otherwise known as a `write strategy,' onto a blank recordable disc." ID at 201; FF 471-

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that were not raised before the ALJ. *Hazani v. United States Int'l Trade Comm'n*, 126 26F.3d 1473, 1476-77 (Fed. Cir. 1997). However, as discussed below, the Commission finds complainant's arguments unpersuasive.

[27]Calimetrics is a company owning alternative technology. *See, e.g.*, ID at 203.

72. He noted that "Dr. McLaughlin testified that at least one economically viable alternative for performing write strategy exists that does not infringe the Farla patent," and that "Dr. McLaughlin identified an OPC and write strategy method available from Calimetrics, Inc., where he is employed as a Principal Scientist, as an alternative that is not covered by the Farla `692 patent and that would comply with the requirements of the Orange Book if it were used." ID at 203; FF 482--485; Trans. (McLaughlin) at 1493:3-8; 1520:16-22; 1527:7-1528:8; 1563:18-1564:23; 1571:3-1571:10.

Complainant asserts that, rather than requiring that respondents prove patent misuse, the ALJ improperly shifted the burden of proof on the issue to it. Complainant contends that the ALJ required it to demonstrate that the Farla `692 patent had been removed from the CD-RW licenses, although the burden of proof should have remained on respondents to demonstrate that the Farla `692 patent was still included in the CD-RW licenses.

In response, respondents assert that "[g]iven that there was undeniable evidence that Farla was listed as essential in the past, the ALJ properly placed the burden on Philips to show that it no longer was [on the list of essential patents]. (FF 486, 488.) In any event, the fact that a nonessential patent has in the past been on the list is sufficient to support a finding of patent misuse." Respondents' reply at 85 n.46.

The ALJ did not shift the burden of proof on this issue to complainant. The ID states as follows:

> The [Farla '692] patent was included in the CD-R license agreement for many years before it was removed from the list of essential patents in 2001. *Compare* RX-840; RX-778; RX-755; RX-914.

> However, at least as of a license agreement signed in January 2002, the Farla '692 patent was still being listed as an essential patent under the CD-RW license agreement, *See* RX-770 at PH087634.
>
> It is unclear whether the Farla '692 patent remains listed on Philips' standard license agreements as an essential patent in the CD-RW pool. Philips' website of form license agreements does not include the lists of essential and nonessential patents for the CD-RW disc pool. *See* "Philips Intellectual Property and Standards, CD-R/RW Patents," *at* http://www.licensing.philips.com/licensees/patent/ob/ (CD-R/RW hyperlink) (last visited on August 26, 2003). In the absence of evidence to the contrary, it can only be assumed that the Farla '692 patent continues to be listed as an essential patent on the form CD-RW license was well as on the agreements of all existing CD-RW licenses. As such, it unreasonably forecloses competition from alternative technologies that also comply with the Orange Book.

ID at 204-05 (emphasis added). Thus, the basis for the ALJ's conclusion that the Farla '692 patent continues to be listed as an essential patent in CD-RW licenses is that, although the patent had been removed in 2001 from the list of essential *CD-R patents*, the patent was still listed as an essential patent in a 2002 *CD-RW* patent license (RX-770 at PH087634 (Jan. 1, 2002)). The ALJ could permissibly infer from this evidence that the Farla '692 continues to be listed as an essential CD-RW patent. No party has directed us to evidence in the record that the patent has been removed from the list of essential CD-RW patents. We conclude that

complainant's arguments concerning the Farla patent are without merit.

As discussed above, the record in this investigation establishes that a licensee could produce an Orange Book compliant CD-RW disc without infringing the Philips Farla '692 patent. Thus, the Farla `692 patent is not in a blocking relationship with the U.S. patents that are actually essential for the manufacture of CD-RWs, and we find that the Farla `692 patent is separate from those patents.

As discussed in the previous section, we also find that in certain joint CD-R and CD-RW licenses there is a tie in fact between the "tying" patent licenses (licenses for U.S. patents that are actually essential for the manufacture of CD-Rs or CD-RWs in accordance with Orange Book standards) and the "tied" patent licenses (licenses for so-called "essential" patents that are actually nonessential to the manufacture of CD-Rs or CD-RWs) regardless of ownership. For the reasons discussed below, we affirm the ALJ's findings that the Ricoh Iwasaki `149 patent and the Sony Yamamoto `719 patent, which are included in certain joint licenses, are actually nonessential to the manufacture of CD-RWs (or CD-Rs) according to Orange Book standards, and find that they are separate from the essential patents in the joint licenses.

The ALJ found that "[l]icenses to at least some of the Philips patents are essential to the manufacture of CD-R/RWs that are in technical and practical compliance with the Orange Book." ID at 173. As discussed below, the record in this investigation establishes that a licensee could produce an Orange Book compliant CD-RW disc using the so-called "essential" patents that are actually essential, without

infringing either the Ricoh Iwasaki `149 patent or the Sony Yamamoto `719 patent.[28] Thus, none of these patents is part of the complex of blocking patents that are required for the manufacture of Orange Book compliant CD-R or CD-RW discs, and we conclude that each of these patents is "separate" from the "tying" patents.[29]

The Iwasaki '149 Patent

The ALJ found that the "claims of the Iwasaki '149 patent are directed to a particular method of performing the OPC procedure, which is setting laser power to an appropriate level to record onto a particular disc." D at 205; Trans. (McLaughlin) at 1516:24-1518:7; 1520:24-1521:11. He also found that "at least one economically viable alternative for performing OPC exists that does not infringe the Iwasaki '149 patent,' and that "[t]he OPC and write strategy method available from Calimetrics, Inc. was identified by Dr. McLaughlin as an alternative that is not covered by the Iwasaki patent and would comply with the requirements of the Orange Book if it were used" ID at 205-06;1517:2-20;1521:12-1522:13; 1563:18-1564:23; 1571:3-10.

Complainant states that the Ricoh Iwasaki '149 patent is not listed as a patent in the CD-R patent pool and that Ricoh is not a CD-R pool licensor.

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[28]We do not decide whether the Spruit `351 patent, the Hamada `388 or `009 patents, the Lagadec `565 patent, the Ogawa `994 patent, the Kramer `493 or `209 patents, or the Mimnagh `462 patent are "separate" from the tying patents.

[29]General challenges to the testimony of respondents' expert (McLaughlin) raised by complainant are discussed *supra* in connection with our discussion of the Farla '692 patent.

The ALJ found the Ricoh Iwasaki '149 patent to be nonessential, reasoning as follows:

> Respondents contend, without contest by Complainant, that the Ricoh Iwasaki '149 patent is nonessential and should not be included as such in the Philips CD-R and CD-RW patent pools. RPHB at 13-15. The claims of the Iwasaki '149 patent are directed to a particular method of performing the OPC procedure, which is setting laser power to an appropriate level to record onto a particular disc. McLaughlin Tr. 1516:24-1518:7; RX-52 (Iwasaki '149 patent). The OPC method defined by the Iwasaki patent consists of calculating a standardized gradation factor by monitoring the amplitudes of signals from test data patterns. McLaughlin Tr. 1520:23-1421:11; RX-52 (Iwasaki '149 Patent).
>
> Respondents assert that the Iwasaki '149 patent is not essential to practice the Orange Book for at least two reasons. First, the Orange Book does not mandate a particular method for carrying out the OPC function. McLaughlin Tr. 1507:10-1509:17; RX-407C (Orange Book CD-R Standard at PH015759); RX-408C (Orange Book CD-RW Standard at PH023331-023332). Philips's employee and technical witness, Hans Mons, testified that some of the characteristics the Orange Book defines for CD-Rs and CD-RWs are not mandatory, and that Orange Book-compliant CD-Rs and CD-RWs do not need to conform to the non-mandatory characteristics defined by the Orange Book. Mons Tr. 453:18-454:2; McLaughlin Tr. 1504:10-18.
>
> Second, as stated earlier in connection with the Farla '692 patent, the Iwasaki '149 patent is not essential as a practical matter because at least one economically viable alternative for performing OPC

> exists that does not infringe the Iwasaki '149 patent. McLaughlin Tr. 1563:1-12. The OPC and write strategy method available from Calimetrics, Inc. was identified by Dr. McLaughlin as an alternative that is not covered by the Iwasaki patent and would comply with the requirements of the Orange Book if it were used. McLaughlin Tr. 1521:12-1522:13; 1523:5-13.
>
> Finally, Respondents contend that the Calimetrics method is not covered by the Iwasaki '149 patent. McLaughlin Tr. 1521:12-18. The Iwasaki patent requires the calculation of a certain mathematical quantity, and the calculation of that mathematical quantity does not occur during the Calimetrics OPC procedure. McLaughlin Tr. 1521:19-1522:13.
>
> Dr. Rubenstein has not rendered any opinion as to the essentiality of the Iwasaki '149 patent. Rubenstein Tr. 2263:11-2264:12. Neither has Complainant offered any expert testimony to counter the evidence presented by Dr. McLaughlin on the patent's nonessentiality. Thus, the evidence of record demonstrates that the Iwasaki '149 patent is nonessential to the practice of the Orange Book, and its inclusion among the list of "essential" patents in the pools unreasonably forecloses competition.

ID at 205-06. To the extent that the ALJ found the Iwasaki '149 patent to be "nonessential" to practice the CD-R technology, we modify the ALJ's findings of fact to reflect that the record indicates that the patent concerns only CD-RW technology. Trans. (McLaughlin) at 1500-01; RX-2381.

In his ID the ALJ specifically relied on the fact that complainant did not challenge the testimony of respondents' expert (McLaughlin) concerning the Iwasaki '149 patent.

Nonetheless, in its submission on review, complainant now asserts that the OPC procedure in attachment C3 of Part III of the Orange Book is mandatory because certain parameters must be included in the ATIP. It contends that the OPC procedure in attachment C3 is mandatory because these parameters are determined according to that OPC procedure. Complainant's argument is not persuasive, however, because there is testimony in the record that, although attachment C3 "gives an example of an OPC-like procedure" in section 3.3 (CX-162C at PH023332), the title of the section, "A procedure for the determination of the OPC parameters for media," indicates that "there's more than one way to do that." Trans. (McLaughlin) at 1509:3-17. We conclude that the ALJ's findings of fact are not clearly erroneous.

The Yamamoto '719 Patent

The ALJ found that the "claims of the Yamamoto '719 patent contain functional limitations for creating a master disc. [Trans. (McLaughlin) at] 1534:14-25; RX-50. The limitations define a method of using a single laser beam to create a master containing both a wobbled pre-groove and pre-recorded data." ID at 206. He further found that "[a]t least one economically viable alternative for creating a master exists that does not infringe the Yamamoto patent. [Trans. (McLaughlin) at] 1535:7-15. According to Dr. McLaughlin, the Calimetrics two-beam mastering method is a commercially viable alternative to the patent. [Trans. (McLaughlin) at] 1568:3-15;1570:1-9." D at 207.

Complainant contends that the ALJ's reasoning is erroneous because it depends on McLaughlin's erroneous construction of the claims of the Yamamoto patent. According to complainant, the claims are not limited to producing a master disc with a single laser beam. It asserts that because, for example, claim 7 uses the transition term

"comprising," "infringement of this claim requires *at least one recording beam*, but it is plainly not limited to exclude methods using more than one beam." Complainant's submission app. B at 41 (emphasis in original). Complainant further argues that McLaughlin did not testify that Calimetrics developed a two-beam mastering technique, but merely speculated about possible alternatives to the Yamamoto patent.

We do not find complainant's argument that the scope of the claims of the Yamamoto patent is not restricted to a single recording beam persuasive. The "Background of the Invention" section of the Yamamoto patent specification states that "[h]itherto, in the case of forming patterns of different widths onto a mother disc, the pits 31, groove 32, and recording spots corresponding to their widths are prepared and both of these recording spots are switched." RX-50, col. 1, 11. 23-27. The specification goes on to identify as a "problem" the fact that "since it is necessary to form two beams, the laser power must ... be set to a large value." RX-50, col. 1, II. 37-38. The "Summary and Object of the Invention" section of the patent specification specifically states that "an object of the present invention [is] to provide an optical recording apparatus in which both the pits and a wide groove can be formed by *using only one recording spot* and the foregoing drawbacks are eliminated." RX-50, col. 1, II. 46-50 (emphasis added). The specification goes on to state that "[b]oth of the pits and the wide groove are formed by *using the single recording beam as explained above. Thus, the foregoing problem which ... occurs when two beams are switched and used can be avoided.*" RX-50, col. 2,11.7-11 (emphasis added). *See also* RX-50, col. 4, II. 38-43, 46-48. Thus, the specification identifies a problem and clearly states that the use of a single recording beam in the present invention avoids the problem.

The ALJ stated that McLaughlin referred to the two-beam mastering method that is a commercially viable alternative to the Yamamoto patent as "Calimetrics two-beam mastering method" ID at 207 (citing Trans. (McLaughlin) at 1568:3-15,1570:1-9). We agree with complainant that the supporting testimony (*see also* 1568:16-20 and 1571:3-10) does not identify the two-beam mastering method as a Calimetrics method McLaughlin did testify, however, that the two-beam method is a commercially viable alternative to the Yamamoto patent. We conclude that complainant's argument regarding the scope of the Yamamoto patent claims and its argument that the two-beam alternative to the Yamamoto patent is speculative are without merit.

The Lockhoff '219 Patent

As stated above, we find that in certain Philips-only CD-R licenses (*e.g.*, RX-872C), licenses to the U.S. patents that are actually essential for the manufacture of CD-Rs in accordance with Orange Book standards (the "tying" patent licenses) are tied in fact to a license to the Lockhoff '219 patent and to a license to the Farla `692 patent (the "tied" patent licenses). As also discussed in the previous section, we find that in the Philips-only CD-RW licenses (*e.g.*, CX-469C; FF 71, 72), licenses to the U.S. patents that are actually essential for the manufacture of CD-RWs in accordance with Orange Book standards (the "tying" patent licenses) are tied in fact to a license to the Lockhoff '219 patent. For the reasons discussed below, we affirm the ALJ's finding that the Lockhoff '219 patent is actually nonessential to the manufacture of CD-Rs or CD-RWs according to Orange Book standards, and find that it is separate from the essential patents.

The Lockhoff '219 patent is directed to a method of copy control (FF 553). Complainant contends that because the Lockhoff '219 patent is "technically essential" to practice the Orange Book standard, the fact that an alternative technology exists to the Lockhoff '219 patent is irrelevant for purposes of an "essentiality" analysis - because a "technically essential" patent reads on the Orange Book. The ALJ found the evidence in conflict, however, and relied on the hearing testimony of respondents' expert McLaughlin. ID at 213.

The ALJ stated that Rubenstein found the Lockhoff '219 patent to be technically essential (ID at 212). The ALJ took specific note of RX-126C (May 14, 2002 Rubenstein Status Report) at PH065726), which is the relevant evidence complainant identifies on this point.[30] The ALJ found that alternative methods existed "such as embedding the copy control in the content" and that [e]mbedding copy control in the content would satisfy the Orange Book but would not be covered by the Lockhoff '219 patent." FF 556, 557 (citing Trans. (McLaughlin) at 1529:14-1531:21). Thus, we affirm the ALJ's findings of fact, and find that the Lockhoff '219 patent is separate from the essential patents.

4. Conclusion

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[30]Complainant's references to CX-163C at PHO15771 (B12.1 - 12.3 of attachment B12 of part II of the Orange Book (CD-R)) and CX-162C at PHO23341 (C9.1 - 9.3 of attachment C9 of part III of the Orange Book (CD-RW)) are inconsistent with the cited portion of Rubenstein's status report (RX-126C at PH065726), which identifies attachments B1 and C1.1 as relevant to the Lockhoff '219 patent and which also identifies attachments B12-1, B12-2, C9-1, and C9-2 as relevant to U.S. Patent No. 5,428,598.

For the reasons discussed above, we conclude that the patents asserted in this investigation are unenforceable for patent misuse *per se*.

II. Analysis of Patent Misuse Under the "Rule of Reason" Standard

The ALJ also found patent misuse under the rule of reason standard ID at 152-53, 182-83, 219-20. He found that complainant's CD-R/RW patent license agreements included as so-called "essential" patents for manufacturing CD-R/RW discs according to the Orange Book standard certain patents that were actually nonessential. ID at 185-213. He concluded that this practice constituted an extension of complainant's statutory right to exclude under its patents. ID at 183-85. He also found that such inclusion of nonessential patents in the license agreements had the anticompetitive effect of foreclosing competition in alternative technology that competes with the technology covered by a nonessential patent that was included as a so-called "essential" patent. ID at. 196-213. We adopt this portion of the ALJ's analysis under the rule of reason standard with the modifications discussed below.

As to the ALJ's conclusion that certain patents included as so-called "essential" patents in complainant's licensing agreements are actually nonessential, we adopt the ALJ's analysis and conclusions with respect to the Farla `692 patent, the Yamamoto '719 patent, the Lockhoff `219 patent, and the Iwasaki `149 patent.[31] We take no position on the ALJ's conclusion that the following patents included as so-

[31]Arguments raised by complainant in its submissions concerning the ALJ's analysis of the Farla '692 patent, the Lockhoff '219 patent, the Yamamoto '719 patent, and the Iwasaki '149 patent are addressed *supra*

called "essential" patents in the licensing agreements are actually nonessential: the Kramer '493 and `209 patents, the Ogawa `994 patent, the Lagadec '565 patent, the Spruit '351 patent, the Mimnagh '462 patent, and the Hamada '388 and '009 patents.

The ALJ also found that the CD-R/RW patent pooling arrangements between complainant and its colicensors constituted horizontal agreements among competitors who controlled the royalty rate for patents in the pools, and concluded that these horizontal restraints rose to the level of patent misuse *per se* as price fixing and price discrimination. We take no position on these conclusions, and also take no position on the ALJ's conclusion that the royalty rate mechanism of the patent pooling arrangements is an unreasonable restraint on competition.[32]

As explained below, we find patent misuse under the rule of reason standard based on the ALJ's findings that the Philips-only CD-RW license included as a purported essential patent the Farla `692 patent, which is in fact

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[32]We adopt those portions of the ALJ's analysis of the royalty rate mechanism under the rule of reason (ID at 213-19) that are relevant to the issue of whether the anticompetitive effects of including nonessential patents in the list of so-called essential patents outweigh the procompetitive effects, *e.g.*, *ID* at 214-15 (attributing the development of CD-R and CD-RW consumer market to standardization), ID at 215-16 (acknowledging well-recognized procompetitive effects of pools that license technically essential patents, but identifying inherent competitive problems posed by pools that encompass nonessential patents); ID at 217-18 (discussing separate lists of essential and nonessential patents that are under control of Philips and its licensor partners and are not negotiable); ID at 219 ("Efforts on the part of pool members to have their patents included in the pool as `essential as a practical matter,' even though those patents do not cover anything in the Orange Book, [are] merely an attempt to forestall competing technologies").

nonessential; that such inclusion had the anticompetitive effect of foreclosing an alternative technology developed by Calimetrics; and that the anticompetitive effects outweigh the procompetitive effects. We also find patent misuse under the rule of reason standard based on the ALJ's findings that certain joint CD-RW licenses (*e.g.*, RX-903C) included as purported essential patents the Philips Farla `692 patent and the Ricoh Iwasaki `149 patent, which are in fact nonessential; that such inclusion had the anticompetitive effect of foreclosing an alternative technology developed by Calimetrics; and that the anticompetitive effects outweigh the procompetitive effects.

A. Legal Standard for Patent Misuse under the Rule of Reason

We adopt the ALJ's articulation of the legal standard for finding patent misuse under the rule of reason. ID at 182-83. Essentially, "[a] rule of reason analysis requires a determination of whether an agreement is on balance an unreasonable restraint of trade, that is, whether its anti-competitive effects outweigh its pro-competitive effects." *Columbia Broad Sys., Inc. v. Am. Soc'y of Composers, Authors & Publishers*, 620 F.2d 930, 934 (2d Cir. 1980) (citing *Nat'l Soc'y of Prof l Eng'rs v. United States*, 435 U.S. 679 (1978); *Cont'l T. V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36 (1977); and *Bd of Trade of Chicago v. United States*, 246 U.S. 231 (1918)).

A rule of reason analysis should be applied in evaluating allegations of patent misuse that do not constitute patent misuse *per se*. *Virginia Panel Corp. v. MAC Panel Co.*, 133 F.3d 860, 869 (Fed. Cir. 1997) (referencing the rule of reason standard applied in the antitrust case *State Oil Co. v. Kahn*, 118 S. Ct. 275, 279 (1997)). To the extent that respondents' arguments with respect to the cases of

Berlenbach v. Anderson & Thompson Ski Co., 329 F.2d 782 (9th Cir. 1964); *Jack Winter, Inc. v. Koratron Co.*, 375 F. Supp. 1 (N.D. Cal. 1970); and *Columbus Auto. Corp. V. Oldberg Mfg. Co.*, 264 F. Supp. 779 (D. Colo. 1967), *aff'd*, 387 F.2d 643 (10th Cir. 1968), are understood as urging us to adopt a different course, we reject those arguments.[33]

The ALJ found patent misuse because nonessential patents are included in the list of so-called "essential" patents in the licenses at issue, and such inclusion forecloses economically viable alternative technology for making CD-R/RWs that competes with technology covered by the "nonessential" patent. He found the Farla `692 patent to be "nonessential" because respondents' expert (McLaughlin) "testified that at least one economically viable alternative for performing write strategy exists that does not infringe the Farla patent." ID at 203. The ALJ found that McLaughlin identified an economically viable alternative for performing an Optimum Power Control (OPC) and write strategy available from Calimetrics that would comply with the requirements of the Orange Book if it were used and that was not covered by the Farla `692 patent. ID at 203-04; FF 482-485. He also found the Iwasaki `149 patent to be "nonessential" because McLaughlin identified an economically viable alternative for performing OPC available from Calimetrics that is not covered by the Iwasaki patent and would comply with the requirements of the Orange Book if it were used. ID at 205-06.

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[33] *See also* Robert J. Hoerner, "The Decline (and Fall?) Of the Patent Misuse Doctrine in the Federal Circuit," 69 *Antitrust Law Journal* 669 (2002), discussing inconsistency between Federal Circuit cases and those cited by respondents.

In its petition for review, complainant asserts that the *per se* standard of patent misuse in tying cases that was applied in *American Securit Co. v. Shatterproof Glass Corp.* has been legislatively over-ruled by the 1988 Patent Misuse Reform Act, which it characterizes as imposing (as a threshold requirement) a finding of market power and requiring a "rule of reason" analysis in analyzing patent misuse.[34] Complainant submits that because an inquiry under the "rule of reason" is now required to support a finding of patent misuse in a tying case, *Shatterproof's* holding that mandatory package licensing extends the scope of a patent is no longer good law.[35]

Relying on *International Manufacturing Co. v. Landon, Inc.*, 336 F.2d 723 (9th Cir. 1964),[36] complainant argues that *Shatterproof* "does not support a determination that Philips has broadened the scope of its CD-R or CD-RW patents by package licensing them." Complainant's petition

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[34]We address the question of whether 35 U.S.C. § 271(d)(5) eliminated the *per se* approach to patent tie-ins in section LA. *supra*.

[35]We reject complainant's contention that *Shatterproof* is "directly contrary" to *Broadcast Music*. As pointed out by the ALJ (ID at 182 n.111), *Broadcast Music* did not involve mandatory package licensing.

[36]Complainant points out that the *Landon* court stated that "it is not an unlawful tying arrangement for a seller to include several items in a single mandatory package when the items may be reasonably considered to constitute parts of a single distinct product," and that "[t]he product ... is no less a single product because its novel aspects are disclosed by two interlocking patents. In such a case, not only is it not unreasonable to treat both patents as constituting a single product, but also licensing them in a package deal appears to be the most practical way of making them available for public use." Complainant's petition for review at 40-41 (quoting 336 F.2d at 730).

for review at 40. It contends that the package licenses are intended to "enable a manufacturer" to make CD-R or CD-RW discs, and that the licenses provide manufacturers with the patents "need[ed] to manufacture the product." *Id.* at 40. It asserts that "[b]ecause each of the patents in the package covers aspects of a single product *and each is licensed for the limited purpose of making the product*, the package licensing of the patents does not extend their scope." *Id.* at 40 (emphasis in original). Complainant argues that the benefits of package licensing are recognized in section 5.5 of the DOJ/FTC Antitrust Guidelines and in the three Business Review Letters from the DOJ Antitrust Division involving package licensing. Respondents and the IA oppose complainant's position.

A leading treatise indeed characterizes *Landon* as "recogniz[ing] an exception to the *American Securit* rule against mandatory package licensing in the case of blocking patents" Donald S. Chisum, *Chisum on Patents* § 19.04[3][c]. And the DOJ has also recognized in its business review letters that packaging blocking patents can be procompetitive:

> A starting point for an antitrust analysis of any patent pool is an inquiry into the validity of the patents and their relationship to each other. A licensing scheme premised on invalid or expired intellectual property rights will not withstand antitrust scrutiny. [footnote omitted] *And a patent pool that aggregates competitive technologies and sets a single price for them would raise serious competitive concerns. On the other hand, a combination of complementary intellectual property rights, especially ones that block the application for which they are jointly licensed, can be an efficient*

> *and procompetitive method of disseminating those rights to would-be users.*

CX-355 (WEG-2 Business Review Letter) at 9 (emphasis added).

> If the [three] [l]icensors [participating in the pool] owned patent rights that could be licensed and used in competition with each other, they might have an economic incentive to utilize a patent pool to eliminate competition among them. A pool that served that purpose "would raise serious competitive concerns." [footnote omitted] In combining such substitute patents, the pool could serve as a price-fixing mechanism, ultimately raising the price of products and services that utilize the pooled patents. *If, on the other hand the pool were to bring together complementary patent rights, it could be "an efficient and procompetitive method of disseminating those rights to would-be users. "* [footnote omitted] By reducing what would otherwise be three licensing transactions to one, the pool would reduce transactions costs for [l]icensors and licensees alike. *By ensuring that each [l]icensor's patents will not be blocked by those of the other two, the pool would enhance the value of all three [l]icensors' patents.*

CX-357 (3C DVD Business Review Letter) at 9 (quoting MPEG-2 Business Review Letter (CX-355) at 9) (emphasis added); *accord* CX-358 (6C DVD Business Review Letter) at 9. Under the standard articulated by the *Landon* court,[37]

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[37]"If we had a case where the licensee could produce a commercially acceptable product utilizing one patent but not infringing

however, neither the Farla `692 patent nor the Iwasaki `149 patent are in a blocking relationship with the other patents included in the pool.[38]

The DOJ business review letters also identify two anticompetitive effects arising from the inclusion in the pool of patents that are substitutes for one another. CX-358 at 10. The 6C DVD business review letter discusses the effects as follows:

> Consider, for example, a situation in which there are several patented methods for placing DVD-ROMs into packaging - each a useful complement to DVD-ROM manufacturing technology, but not essential to the standard A DVD-ROM maker would need to license only one of them; they would be substitutes for each other. Inclusion in the pool of two or more such patents would risk turning the pool into a price-fixing mechanism. Inclusion in the pool of only one of the competing nonessential patents, which the pool would convey along with the essential patents, could in certain cases unreasonably foreclose the non-included competing patents from use by manufacturers; because the manufacturers would obtain a license to the one patent with the pool, they might choose not to

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the others in the package, then clearly we would not have a case involving blocking patents." 336 F.2d at 731.

[38]The ALJ found that at least one economically viable alternative exists to the Farla `692 patent that would comply with the requirements of the Orange Book and would not infringe the Farla `692 patent if it were used and that at least one economically viable alternative exists to the Iwasaki `149 patent that would comply with the requirements of the Orange Book and would not infringe the Iwasaki `149 patent if it were used ID at 203-06.

> license any of the competing patents, even if they otherwise would regard the competitive patents as superior. Limiting a pool to essential patents ensures that neither of these concerns will arise; rivalry is foreclosed neither among patents within the pool nor between patents in the pool and patents outside it.

CX-358 (6C DVD Business Review Letter) at 10; *see also* CX-357 (3C DVD Business Review Letter) at 9; CX-355 (MPEG-2 Business Review Letter) at 9-10.

In this investigation, the AD found that a viable alternative technology exists *outside the pools* for the technology covered by some of the patents that are included in the pools, that is, at least one economically viable alternative exists to the Farla `692 patent that would comply with the requirements of the Orange Book and would not infringe the Farla `692 patent if it were used and at least one economically viable alternative exists to the Iwasaki '149 patent that would comply with the requirements of the Orange Book and would not infringe the Iwasaki149 patent if it were used. Complainant asserts that there is no evidence that its licensees aren't using all of the patents included in the pools to manufacture the CD-R/RWs. Even if true, that fact does not obviate the competitive harm identified by the ALJ - which is that alternative technologies that could be used to manufacture CD-R/RWs are "foreclosed" because licensee manufacturers are forced to take licenses to nonessential patents covering technology that competes with the alternative technology.

B. Certain So-Called "Essential Patents Are Not Essential

Complainant also argues that the ALJ adopted an incorrect standard for evaluating "essentiality." It contends that the essentiality standard which it advanced (through the testimony of Dr. Rubenstein), and which was rejected by the ALJ, was approved by the DOJ Antitrust Division.

We do not find persuasive complainant's contention that the ALJ assumed, contrary to "uncontested evidence," that sections of the Orange Book labeled "recommendations and clarifications" are optional (complainant's submission at 111). Although complainant relies on the testimony of Dr. Rubenstein on this point, the ALJ considered Dr. Rubenstein's position but rejected it based on the testimony of respondents' expert (McLaughlin), complainant's witness (Mons); and the text of the Orange Book. *See, e.g.*, ID at 18849, 205; Trans. (McLaughlin) at 1504:10-18,1507:10-1509:17; Trans. (Mons) at 453:18-454:2; *see also* Trans. (McLaughlin) at 1504:19-1506:6; RX-407C (Orange Book CD-R Standard § 1.3 at PH015684); RX-408C (Orange Book CD-RW Standard § 1.3 at PH023245).

We also disagree with complainant's characterization of the 6C DVD Business Review Letter as "noting that both 'optional or mandatory features of the standard' would be considered in determining essentiality." Complainant's submission at 106 (citing CX-358 § KB). The language upon which complainant relies appears in connection with the allocation of royalties, not the determination of essentiality. CX-358 at 6. Complainant's position that a patent that is necessarily infringed by compliance with an optional portion of the standard is "technically essential" is not supported by the DOJ Business Review Letters.[39]

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[39] According to Dr. Rubenstein, "essential" patents include those that are either (1) "technically essential" or (2) "essential as a practical matter" (also referred to by Dr. Rubenstein as "commercially essential").

In the MPEG-LA business review letter, the DOJ stated that "[t]he limitation of the Portfolio [(i.e., the patents in the package)] to technically essential patents, as opposed to merely advantageous ones, helps ensure that the Portfolio patents are not competitive with each other *and that the Portfolio license does not, by bundling in nonessential patents, foreclose the competitive implementation options that the MPEG-2 standard has expressly left open.*" CX-355 at 10 (emphasis added). Later in the same letter, the DOJ explained that "conditioning of a license for one intellectual property right on the license of a second such right could be a concern where its effect was to foreclose competition from technological alternatives to the second. In this instance, however, the essentiality of the patents – determined by the independent expert – means that there is no technological alternative to any of them and *that the Portfolio license will not require licensees to accept or use any patent that is merely one way of implementing the MPEG-2 standard, to the detriment of competition.*" CX-355 at 11 (emphasis added).

In determining whether a patent is "essential as a practical matter," Dr. Rubenstein considers whether alternative technology exists -- but he does not consider the existence of alternative technology in deciding whether a patent is "technically essential." Complainant's submission at 104-05 ("Dr. Rubenstein does not consider whether there are any alternatives to technically essential patents"), 107 (Trans. (Rubenstein) at 2185-86).

The ALJ recognized that a "technically essential" patent is one that is "inevitably infringed by compliance with the specification." *E.g.*, ID at 189. He also recognized, however, that "if the manufacturer practices a methodology that is identified in the Orange Book as an `alternative' or `optional' methodology that is *not* covered by any patent in the pool, a manufacturer utilizing such optional technology would be in technical compliance with the Orange Book and would not be an infringer [of any patent in the pool]." ID at 189.

As explained in the ID -

> In the ... 3C DVD Business Review Letter, the patent pools in question were limited to "essential" patents that were defined somewhat more broadly from the mpEG-2 pool as being "necessary (as a practical matter) for compliance with the DVD[-Video or DVD-ROM] Standard Specifications." *See* CX-357 (3C DVD Business Review Letter at p. 3). The DOJ stated that it understood this definition "to encompass patents which are technically essential - *i.e.* inevitably infringed by compliance with the specifications - and those for which existing alternatives are economically unfeasible." *See id.* at 3 n.8.

ID at 143. The DOJ continued with this same approach in the 6C DVD Business Review Letter (CX-358), which is the letter cited by complainant. In that letter, the DOJ stated that, in the proposed licensing arrangement, a patent is "essential" "if it is `*necessarily infringed*,' or `there is no realistic alternative' to it, `in implementing the DVD Standard Specifications.'"[40] CX-358 at 3 (quoting agreement at issue) (emphasis added).

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[40]The DOJ letter goes on to note that the definition of "essential" in the proposed licensing arrangement -

> introduces some uncertainty. By asking the expert to identify not only those patents that are literally essential to compliance with the DVD-ROM and DVD-Video standards, but also those for which there is no "realistic" alternative, the definition introduces a degree of subjectivity into the selection process. Based on your representations, however, it appears that the expert will interpret "realistic" to mean economically feasible.

CX-358 at 10.

The 6C DVD Business Review Letter also states that

> [a]fter deducting its licensing-administrator fee, Toshiba will distribute the remaining royalties among the Licensors pursuant to an agreed allocation formula set forth in the Ground Rules for Royalty Allocation. This formula takes into account how often a Licensor's "essential" patents are infringed by either manufacture or sale of licensees' products, the age of the patents, and, in the case of patents "essential" to disc standards, whether the Licensor's patents relate to optional or mandatory features of the standard.

CX-358 at 6 (footnote omitted). Although the above-quoted statement indicates that a patent relating to "optional" features of the standard may be deemed "essential," it does *not* follow that a patent relating to "optional" features of the standard could be deemed "technically essential." This is because a patent is essential (1) if it is necessarily infringed by compliance with the standard (*i.e.*, technically essential) *or* (2) if there is no realistic alternative to it in implementing the standard (*i.e.*, necessary as a practical matter). Consistent with the concerns expressed by the DOJ in the MPEG-LA Business Review Letter quoted above, although a patent that relates to `optional" features of the standard may be deemed "essential," such a patent must be "necessary as a practical matter" - and cannot be "technically essential."[41]

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[41]To allow a patent that relates to "optional" features of the standard to be deemed "technically essential" because the patent is necessarily infringed by compliance with the optional features of the standard (even if the patent is not infringed by practice of the mandatory

We disagree with complainant's assertion that the ALJ ignored the "essential as a practical matter" criterion. *See, e.g.,* ID at 142-43,193. As stated by the ALJ (ID at 143), in approving the necessary as a practical matter standard in the 3C DVD Business Review Letter, the DOJ stated that this definition encompassed patents "for which existing alternatives are economically unfeasible." CX-357 at 3 n.8,10 (no "economically viable substitutes"); *see also* CX-358 at 3,10 (no "economically feasible alternatives"). Although respondents' expert (McLaughlin) testified that his essentiality analysis did not use "essentiality as a practical matter,"[42] that does not mean that the ALJ could not rely on McLaughlin's testimony that a particular alternative technology exists, is economically feasible, can be used to practice the Orange Book standard, and is not covered by a patent in applying the "essential as a practical matter" standard. *See, e.g.,* ID at 203-04 (finding that the Farla `692 patent has not been shown to be "essential as a practical matter"); ID at 205-06 (finding that the Iwasaki `149 patent is not essential as a practical matter).

C. The ALJ's Finding of Anticompetitive Effect Is Supported by the Evidence

The ALJ identified specific patents that were identified in complainant's licenses as so-called "essential" patents even though (1) the patent was not "technically essential" to practice the Orange Book, and (2) economically viable, alternative technology existed to that covered by the patent. He concluded that the inclusion of actually

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portions of the standard) would foreclose alternative competitive implementation options that the standard has expressly left open.

[42]Trans. (McLaughlin) at 1558:17-1559:4.

nonessential patents among the so-called "essential" patents unreasonably foreclosed competition. He found that alternative technologies that compete with the technology of those patents are unreasonably foreclosed from use by licensee manufacturers because the manufacturers are wedded to the nonessential patents that they are compelled by the pools to accept. ID at 196. Thus, the anticompetitive effect of the tying arrangement *(i.e.,* including actually nonessential patents in the list of so-called "essential" patents and requiring a licensee to take all of the so-called "essential" patents) is foreclosure of competition.

While not stated explicitly in the ID, the injury to competition occurs in the market for the "tied" patent, *viz,* the technology licensing market for the actually nonessential patent (and substitute technology) that is included in the list of so-called "essential" patents. The foreclosure occurs because the ability of owners of competing technology to license their technology to CDR/RW manufacturers is impaired by the requirement that the manufacturers license the nonessential patents, which is a disincentive for them to license alternative, substitute technologies for the nonessential patents. FF 177, 179, 45456.

D. The ALJ Balanced the Pro-Competitive Effects

We do not find persuasive complainant's argument that the ALJ failed to consider the procompetitive effects of its licensing practices and weigh them against the anticompetitive effects. The ALJ considered the procompetitive effects advanced by complainant at several points in the ID.[43] ID at 192-94, 214-16, 219. He considered

[43]As noted *supra* in footnote 32, we have adopted those portions of the ALJ's analysis of the royalty rate mechanism under the rule of

and rejected complainant's argument that its licensing practices created a new consumer product (CD-R/RWs) and a new industry. ID at 214-15. He regarded those benefits as flowing from the Orange Book standards. Complainant's argument - that the ALJ's analysis is incorrect because a license is required to produce CD-R/RWs - is misguided because (as complainant -concedes in its submission at 131 n.83) all necessary patent rights could be obtained from individual licensors without a pool license. The ALJ considered and rejected complainant's contention that a broad package is convenient to manufacturers; he specifically found that the convenience to manufacturers of a broad package of patents was outweighed by the anticompetitive effect on alternative technologies of packaging nonessential patents with essential patents. ID at 192-94.

For the foregoing reasons, we conclude that the patents asserted in this investigation are unenforceable for patent misuse under the rule of reason.

Thus, we have found the asserted patents unenforceable for patent misuse *per se* and have also found the asserted patents unenforceable for patent misuse under the rule of reason. We affirm the ALJ's conclusion that although patent misuse can be purged if the patent holder shows that he has completely abandoned the improper practices that were found to be misuse and that the consequences of the misuse have been fully dissipated, no such showing has been made by complainant in this investigation. ID at 146-47, 220; FF 602.

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reason (ID at 213-19) that are relevant to the rule of reason balancing of the procompetitive effects against the anticompetitive effects of including nonessential patents in the list of so-called essential patents.

PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of	
Certain Recordable Compact Discs and Rewritable Compact Discs	ITC Inv. No. 337-TA-474

INITIAL DETERMINATION
Administrative Law Judge Sidney Harris

Pursuant to the Notice of Investigation, 67 Fed. Reg. 48948 (2002), this is the Administrative Law Judge's Initial Determination in the Matter of Certain Recordable Compact Discs and Rewritable Compact Discs Containing Same, United States International Trade Commission Investigation No. 337-TA-474. 19 C.F.R. § 210.42(a).

The Administrative Law Judge hereby determines that no violation of section 337 of the Tariff Act of 1930, as amended, has occurred in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain recordable compact discs or rewritable compact discs by reason of infringement of claims 1, 5, or 6 of U.S. Letters Patent 4,807,209, claim 11 of U.S. Letters Patent 4,962,493, claims 1, 2, or 3 of U.S. Letters Patent 4,972,401, claims 1, 3, or 4 of U.S. Letters Patent 5,023,856, claims 1-5 or 6 of U.S. Letters Patent 4,999,825, or claims 20, 23-33, or 34 of U.S. Letters Patent 5,418,764.

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The following abbreviations may be used in this Initial Determination:

ALJ -	Administrative Law Judge
ALJX -	Administrative Law Judge Exhibit
CDX -	Complainants' Demonstrative Exhibit
CPX -	Complainant's Physical Exhibit
CX -	Complainant's Exhibit
Dep. -	Deposition
EDIS -	Electronic Document Imaging System
FF -	Finding(s) of Fact
JPX -	Joint Physical Exhibit
JX -	Joint Exhibit
PCL -	Proposed Conclusion of Law (CPCL, RPCL or SPCL)
PFF -	Proposed FF (CPFF, RPFF or SPFF)
PRF -	Proposed Reply or Rebuttal Finding (CPRF, RPRF or SPRF)
RDX -	Respondents' Demonstrative Exhibit
RPX -	Respondents' Physical Exhibit
RX -	Respondents' Exhibit
SX -	Commission Investigative Staff Exhibit
Tr. -	Transcript

IX. PATENT MISUSE

A. Background Facts

Respondents raise as a defense that the patents at issue are unenforceable because Complainant has engaged in patent misuse involving the creation of an unlawful patent pool and the use of its power to control the United States CD-R and CD-RW markets. *See* Respondent Gigastorage's Answer to Complaint, Fifth Affirmative Defense. These unlawful practices, according to Respondents, include engaging in a policy of mandatory and coercive package licensing, requiring grantback licenses, and engaging in predatory patent litigation. *See id.*

In order to understand the scope of Respondents' allegations, it is necessary to review the extensive background facts behind them, including, in particular, the technological standards that have been implemented by Complainant for CD-R and CD-RW technology, the patent pools maintained by Complainant to license that technology, and the extensive regulatory history of those patent pools.

1. The "Orange Book"

The patents at issue are among those in their patent pools that Complainant alleges are essential for manufacturers to implement the technical standards for manufacture of CD-Rs and CD-RWs as set out in two publications that are jointly issued by Philips and Sony Corporation ("Sony"). Complaint, ¶ 2 .4. One of these publications is entitled "Compact Disc Recordable System Description" (for CD-Rs) and the other is entitled "Compact Disc Rewriteable System

Description" (for CD-RWs). *Id.*; RX-407C; RX-408C.[44] These publications are more commonly referred to as Parts II and III, respectively, of the "Orange Book." *Id.* Complainant makes the Orange Book available only to licensees of patented CD-R and CD-RW technology or to entities under other contractual arrangements with Complainant . *Id.*

The technical specifications in the Orange Book include certain features that Complainant alleges are covered by the patents in the pool, including the patents at issue. *See* Complaint, ¶ 2.5. Complainant licenses these patents as a package to manufacturers of CD-Rs and CD-RWs. *Id.* In turn, manufacturers of CD-R discs or CD-RW discs include the features set forth in the Orange Book in order for the discs to be compatible with CD players, CD-ROM drives and MultiRead drives that are installed in personal computers and home entertainment systems that are also manufactured in accordance with corresponding Orange Book standards for those devices. *See id.*

2. The Philips CD-R and CD-RW Patent Pools

In the early 1990s, Philips, Sony and Taiyo Yuden formed a pool of the CD-R patents that each own in order to license manufacturers to produce and sell Orange Book compliant CD-R discs. Philips and Sony formed a similar patent pool along with Ricoh for Orange Book compliant CD-RW discs.[45] Similar pools were also formed by Philips

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[44] The versions of these sections of the Orange Book that were introduced into evidence are "Part II: CD-R Version 3.1," dated December 1998 (RX-407C), and "Part III: CD-RW Version 2.0," dated August 1998 (RX-408C).

[45] For convenience, the patent pools of Philips, Sony, Taiyo Yuden and Ricoh in their various forms are collectively referred to hereafter as the

and Sony to license patents for compatible CD-R and CD-RW recorders. The original CD-R standard license agreements provided licenses for a list of some 45 U.S. patents and many other foreign patents owned by Philips, Sony and Taiyo Yuden for Orange Book compliant CD-R discs. *See, e.g.*, RX-1832 (1999 Gigastorage CD-WO/MO[46] Disc Agreement). Those agreements required royalty payments of three percent of the net sales price for each disc, with a minimum royalty of 10 Japanese yen. *See id.* (1999 Gigastorage CD-WO/MO Disc Agreement, ¶ 4.02).

As time passed, the Philips CD-R and CD-RW patent pools have changed formats somewhat. Whereas the CD-R pool was originally licensed to manufacturers as a single package of patents, it has evolved into a series of packages of so-called "essential" and "non-essential" patents, the former of which must be licensed by the manufacturer but the latter of which may be licensed in addition without paying any additional royalty fee. These packages have been further broken up into sub-packages consisting of the essential and non-essential patents of each licensor partner and the combined essential and non-essential patents of Philips and Sony. The many combinations of CD-R patent packages consist of exhibits to the standard "CD-R Disc Patent License Agreement" of all three partners and are maintained on a Philips internet website. *See* "Philips Intellectual Property and Standards, CD-R/RW Patents," *at* http://www.licensing .philips.com/licensees/patent/ob/, "CD-

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"Philips CD-R patent pool" and the "Philips CD-RW patent pool."

[46] "CD-WO" and CD-MO" were names originally used in Philips' licensing agreements for the two prevalent specifications for what was known in the market as "CD-R" technology. Eventually, CD-WO came to be accepted in the market more than CD-MO. Thus, it is CD-WO technology that today is synonymous with CD-R. See RX-1871C (Taiwan ROC Opinion at GT 000328-29).

R/RW hyperlink" (last visited on September 27, 2003). Philips' CD-RW packages are divided into similar arrangements, but they are not shown on the Philips website.

3. Regulatory History of Patent Pools

a. The DOJ Antitrust Division Business Review Letters

Patent pools for technology in industries related to the CD-R industry have been reviewed by the Antitrust Division of the U.S. Department of Justice ("DOJ") in three business review letters that were issued in the middle and late 1990s. *See* CX-355 (the June 26, 1997 "MPEG-2 Business Review Letter"); CX-357 (the December 16, 1998 "3C DVD Business Review Letter"); CX-358 (the June 10, 1999 "6C DVD Business Review Letter"). In those letters, the DOJ placed restrictions on the types of patents that could be included in such pools in order to avoid anticompetitive effects, and set forth restrictions on the manner in which patents could be included in the pools. *See id.* However, Philips and its licensor-partners have never submitted the CD-R and CD-RW patent pools to the DOJ for business review.

In the three business review letters issued by the DOJ in the 1990s, the structure of the reviewed pools were limited to "essential" patents for practicing the technology in question. In the first MPEG-2 Business Review Letter, the patents in the pool were defined as those that are "essential to compliance" with the industry manufacturing standards for the MPEG-2 product, and "there is no technical alternative to any of the Portfolio patents within the standard." *See* CX-355 (MPEG-2 Business Review Letter at 9). The essentiality of the patents in the pool was to be monitored by "an independent expert as an arbiter of essentiality" to review

patents for inclusion in, or exclusion from, the pool. *See id.* at 5.

"The limitation of the Portfolio to technically essential patents, as opposed to merely advantageous ones," the DOJ went on in the MPEG-2 letter, "helps ensure that the Portfolio patents are not competitive with each other and that the Portfolio license does not, by bundling in non-essential patents, foreclose the competitive implementation options that the MPEG-2 standard has expressly left open." CX-355 at 10. Further, the DOJ opined, "[t]he continuing role of an independent expert to assess essentiality is an especially effective guarantor that the Portfolio patents are complements, not substitutes." *Id.* Consequently, the DOJ determined in the MPEG-2 Business Review Letter that the patent pool under review would not trigger enforcement action as so described.

In the second 3C DVD Business Review Letter, the patent pools in question were limited to "essential" patents that were defined somewhat more broadly from the MPEG-2 pool as being "necessary (as a practical matter) for compliance with the DVD[-Video or DVD-ROM] Standard Specifications." *See* CX-357 (3C DVD Business Review Letter at p. 3). The DOJ stated that it understood this definition "to encompass patents which are technically essential - *i.e.*, inevitably infringed by compliance with the specifications - and those for which existing alternatives are economically unfeasible." *See id.* at 3 n.8. In finding that no enforcement action would be triggered by this patent pool as so described, the DOJ asserted the following *caveat*:

> Some uncertainty arises from this definition's imprecision: Unlike the MPEG-2 pool, which required actual technical essentiality for eligibility, this pool introduces the concept of necessity "as a

> practical matter." On its face, this latter standard is inherently more susceptible to subjective interpretation. [footnote omitted] An excessively liberal interpretation of it could lead to the inclusion of patent rights for which there were viable substitutes. In that event, the pool could injure competition by foreclosing such substitutes.
>
> Based on what you have told us, however, the definition of "necessary (as a practical matter)" that the expert will be employing is sufficiently clear and demanding that the portfolio is unlikely to contain patents from which there are economically viable substitutes. [footnote omitted] Thus, so long as the patent expert applies this criterion scrupulously and independently, it is reasonable to expect that the Portfolio will combine complementary patent rights while not limiting competition between them and other patent rights for purposes of the licensed applications.

CX-357 (3C DVD Business Review Letter at p.10).

b. The Taiwan Fair Trade Commission Investigation

In 2001, the Taiwan Fair Trade Commission ("Taiwan FTC") conducted an investigation into the Philips CD-R patent pool and ruled that it was illegal under the Taiwanese Fair Trade Law. *See* RX-1871C (translation). The Taiwan FTC found that Philips, Sony and Taiyo Yuden were horizontal competitors in the CD-R manufacturing technology market through their ownership of technologies and patents related to that activity. *See id.* at GT000332. Through their joint decision on the royalty rate and joint licensing of that technology, they had acquired a dominant position in the CD-R technology patent license market in

Taiwan, had improperly maintained the royalty rate, had refused to provide licensees with important information regarding the license agreements, and had prohibited licensees from objecting to the validity of the patents in the pool. *See id.* at GT000311.

According to the conclusions of the Taiwan FTC, the CD-R technology owned by Philips and its licensor-partners had "an overwhelmingly superior position in the CD-R patented technology license market and may exclude other enterprises from participating in competition," thereby constituting a "monopolistic enterprise" under Taiwan law. RX-1871C at GT000336. The Taiwan FTC also found that the royalty rate of three percent of net sales or a minimum of 10 yen did not have a detrimental impact on manufacturers when average selling prices of CD-R discs in the world market in 1996 was $7.00 U.S. per disc, but by 2000, that price had dropped drastically to less than 50 cents U.S. *See id.* at GT000339. Juxtaposed with the rapid growth in global CD-R demand and production from 1996 to 2000, which was much faster than expected, Philips' licensing profits under its existing royalty structure in 2000 would amount to 20 to 60 times that in 1997, far more than originally expected. *See id.* at GT000339-40. The 10 yen minimum rate under this scenario would amount to 17.8 percent of the net selling price of a disc which, the Taiwan FTC found, is far more than the licensees can bear. *See* GT000340. Philips and its licensor partners had failed to make adjustments to its royalty structure to meet the market needs of manufacturers and had thus violated the Taiwan Fair Trade Law, according to the Taiwan FTC. *Id.* at GT000340-41 .

c. The EC Anti-dumping Investigation

The European Commission ("EC") has conducted an anti-dumping proceeding concerning imports of CD-Rs

originating in Taiwan. RX-1704C . At the conclusion of the investigation in late 2001, the EC determined that CD-R disc manufacturers in Taiwan had been dumping their products in Europe. RX-1379C (p. 77). In response to dumping of CD-R discs by Taiwanese manufacturers, the EC established duties on such CD-Rs, based on its investigation of pricing and volume sales to Europe and how these related to costs and other factors. RX-1379C (p. 77). The duties imposed by the EC ranged from 18.8% to 39.3%, the lower amount charged to companies that cooperated with the EC investigation and were found to practice reasonable pricing standards. The higher charges were made to non-cooperating companies. RX-1379C (p. 77). The anti-dumping duty imposed on Gigastorage was 20.1%, and the duty imposed on Princo was 29.9%. RX-1379C (p. 78) .

B. Overview of the Patent Misuse Defense

Given these background developments, Respondents now raise the defense of patent misuse in this investigation by alleging that the patents at issue are unenforceable because, as part of the Philips CD-R and CD-RW patent pools, their imposition on Respondents violates U.S. antitrust laws or otherwise unreasonably restrains trade.

"The patent misuse doctrine, born from the equitable doctrine of unclean hands, is a method of limiting abuse of patent rights separate from the antitrust laws. The key inquiry under this fact-intensive doctrine is whether, by imposing the condition, the patentee has impermissibly broadened the physical or temporal scope of the patent grant with anticompetitive effect." *B. Braun Medical, Inc. v. Abbott Laboratories*, 124 F.3d 1419, 1426 (Fed.Cir. 1997) (internal quotation marks omitted); *Windsurfing Intern. Inc. v. AMF, Inc.*, 782 F.2d 995, 1001 (Fed.Cir.), *cert. denied*, 477 U.S. 905 (1986); *also see Morton Salt Co. v. Suppiger*

Co., 314 U.S. 488, 492-93 (1942) . Where patent misuse is found, it results in the withholding of any remedy for infringement or breach of a license agreement until the misuse is purged upon abandonment of the abusive practice and dissipation of any harmful consequences. *See* 6 Donald S. Chisum, *Chisum on Patents* § 19.04 (2000).

Patent misuse "is viewed as a broader wrong than an antitrust violation because of the economic power that may be derived from the patentee's right to exclude. Thus, misuse may arise when the conditions of antitrust are not met." *C.R. Bard, Inc. v. M3 Systems, Inc..*, 157 F.3d 1340 (Fed. Cir. 1998). In other words, conduct that falls short of being an antitrust violation may constitute patent misuse. *See Virginia Panel Corp. v. MAC Panel Co.*, 133 F.3d 860, 872 (Fed.Cir. 1997) ("*Virginia Panel*") ("[V]iolation of the antitrust laws ... requires more exacting proof than suffices to demonstrate patent misuse.").

A patentholder deemed to have misused its patents may resume the enforcement of patent rights when a "purge" of the misuse has been accomplished . *United States Gypsum v . National Gypsum Co.*, 352 U.S. 457, 494 (1957) ("It is now, of course, familiar law that the courts will not aid a patent owner who has misused his patents to recover any of their emoluments accruing during the period of misuse or thereafter until the effects of such misuse have been dissipated, or 'purged' .... "). "Courts have uniformly applied a two-prong test to determine whether a purge has been effected. The patent holder must demonstrate a complete abandonment of the improper practices found to constitute misuse and that the consequences of the misuse have been fully dissipated." *In re Yarn Processing Patent Validity Litigation*, 472 F. Supp. 180, 183-84 (S.D. Fla.1979). With respect to the first prong, in the licensing context this requires that all licenses containing the improper provisions

must have expired, or at least that the improper provisions be removed. *See Koratron Co. v. Lion Uniform, Inc.*, 409 F. Supp. 1019, 1023 (N.D. Cal. 1976) (misuse did not stop until the last of the "old-form" licenses expired). The patentholder that has engaged in misuse bears the burden of proving that a purge has occurred. *In re Yarn Processing Patent Validity and Antitrust Litigation,* 398 F. Supp. 31, 63 (S .D. Fla. 1975), *affd sub nom . In re Yarn Processing Patent Validity Litigation* , 541 F.2d 1127 (5th Cir. 1976), *cert. denied sub nom. Lex Tex Ltd., Inc. v. Universal Textured Yarns, Inc.*, 433 U.S. 910 (1977).

One form of patent misuse stems from tying arrangements, whereby a seller forces a purchaser desiring to buy one product (the "tying product ") to also buy another, unwanted product (the "tied product") as a condition to buying the first product. Tying arrangements "are an object of anti-trust concern for two reasons – they may force buyers into giving up the purchase of substitutes for the tied product, and they may destroy the free access of competing suppliers of the tied product to the consuming market." *United States v . Loew's, Inc.*, 371 U.S. 38, 44-45 (1962) (citations omitted) ("*Loew's*"). The benchmark of illegality of such arrangements "is that the seller must have 'sufficient economic power with respect to the tying product to appreciably restrain free competition in the market for the tied product'". *Id.* at 45. Such power comes not only from a seller's market dominance derived from its ability "to control price and to exclude competition," but can also come from "the tying product's desirability to consumers or from uniqueness in its attributes." *Id.*

At one time, market power in antitrust cases involving tying arrangements was presumed when the tying product was patented or copyrighted. *Loew's, supra*, 371 U.S. at 45. A long line of cases utilizing this presumption reflected "a

hostility to use of the statutorily granted patent monopoly to extend the patentee's economic control to unpatented products. The patentee is protected as to his invention, but may not use his patent rights to exact tribute for other articles." *Id.* at 46 and cases cited therein. Such tie-ins, the Supreme Court noted, "pose an unacceptable risk of stifling competition and therefore are unreasonable 'per se.'" *Jefferson Parish Hospital District No. 2 v. Hyde*, 466 U.S . 2, 9 (1984) ("*Jefferson Parish*").

Eventually, however, the law evolved to where market power was no longer presumed to flow solely from the statutory monopoly conferred on a patentholder or copyright holder. Instead, the Supreme Court came to the unanimous view "that every refusal to sell two products separately cannot be said to restrain competition . If each of the products may be purchased separately in a competitive market, one seller's decision to sell the two in a single package imposes no unreasonable restraint on either market, particularly if competing suppliers are free to sell either the entire package or its several parts." *Jefferson Parish, supra,* 466 U.S. at 11-12. In the patent context, Justice O'Connor noted in a concurring opinion that "[a] common misconception has been that a patent or copyright, a high market share, or a unique product that competitors are not able to offer suffice to demonstrate market power. While each of these three factors might help to give market power to a seller, it is also possible that a seller in these situations will have no market power: *for example, a patent holder has no market power in any relevant sense if there are close substitutes for the patented product.* " *Id.* at 38 n.7 (O'Connor, J., concurring) (emphasis added).

This view of market power prevailed in later cases. *See, e.g., A .I. Root Co. v. Computer/Dynamics, Inc.*, 806 F.2d 673, 676 (6th Cir. 1986) ("[W]e find the pronouncement in

Loew's to be overbroad and inapposite to the instant case. Accordingly, we reject any absolute presumption of market power for copyright or patented product, ... [T]he evil of tie-ins exists only when the tying product can force consumers to buy an unwanted tied product. This exists only when the tying product confers great market power, evidenced by an exceptional demand for the tying product. However, such a presumption is not warranted merely by existence of a copyright or patent."). In 1988, Congress codified this view when it revised the patent law to narrow the use of the patent misuse defense in certain instances, including defenses based on antitrust-type concerns flowing from patent tying arrangements. In Title II of the 1988 Patent and Trademark Office Authorization Act, entitled "Patent Misuse Reform," Section 271(d) of the Patent Code was amended to state, in relevant part :

> No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: ... (5) conditioned the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, *in view of the circumstances*, the patent owner *has market power in the relevant market* for the patent or patented product on which the license or sale is conditioned.

Patent and Trademark Authorization Act of 1988, Pub. L. No. 100-703, Title II, § 201, 102 Stat. 4676 (1988) (current version at 35 U.S.C. § 271(d)(5) (2001)) (emphasis added).

Remarks in the *Congressional Record* by the bill's sponsors show that the purpose of the bill was to eliminate

the presumptive view of market power in patent-based cases where substitutes for the patented product exist in the relevant market:

> ...[T]he bill before us proceeds on the basis of consensus about two categories of misuse that the Committee on the Judiciary concluded *should not be the subject of a rigid per se rule.*
>
> The two subject matters affected by the proposed amendment are "refusal to use or license" a patented invention and *the tying of a patented product to another separate product.*
>
> ***
>
> *The underlying principle being advanced by this proposal is the elimination of any vestiges of a per se or automatic inference of patent misuse from certain tying practices.*
>
> ***
>
> The use of the term ["]relevant market["] is designed to import into the courts' analysis the idea that the scope of the product involved focuses the courts['] attention on the nature of the property right. *If a patented product is unique because no practical substitutes exist, the scope of the relevant market would be coextensive with the patent. In the situation where the product is sold in a marketplace context where there are substitute products, the scope of the market should resemble the typical antitrust analysis of relevant market.*
>
> ***

> The use of the term ["]in view of the circumstances,["] is again designed to give the courts the requisite flexibility to exercise their equitable powers. See 35 U.S.C. section 283. *This phrase is designed, in part, to allow the courts to assess the potentially competitive or anticompetitive effects of the tie-in practice.*

134 Cong. Rec. 32,295 (October 20, 1988) (remarks of Rep. Kastenmeier) (emphasis added).

A decade later, the Federal Circuit, in *Virginia Panel supra*, recognized that the 1988 amendment resulting in Section 271(d)(5) "provides that, *inter alia*, in the absence of market power, even a tying arrangement does not constitute patent misuse." *Virginia Panel, supra*, 133 F.3d at 869. Thus, under Section 271(d)(5), an infringement action may be precluded by a patent misuse defense based on a patent tying arrangement that is found to be illegal "*per se*," meaning that its "nature and necessary effect are so plainly anticompetitive" that it should be treated as unlawful without an elaborate inquiry into the restraint's likely competitive effect (*See Federal Trade Commission v. Superior Court Trial Lawyers Association*, 493 U.S. 411, 433 (1990)),[47] but only if an analysis of market power is made that includes an inquiry into whether substitutes for the patented product are available.[48]

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[47] Among the restraints that have been held per se unlawful are naked price-fixing, output restraints, and market division among horizontal competitors, as well as certain group boycotts and resale price maintenance." U .S. Dept. of Justice and Fed. Trade Comm., Antitrust Guidelines for the Licensing of Intellectual Property § 3 .4, 1995 WL 229332 (April 6, 1995).

[48] Some controversy has arisen in recent case law as to whether Section 271(d)(5) has somehow "eliminated" the "*per se*" approach to finding patent misuse in patent tie-ins, leaving the "rule of reason" as the only way to analyze a patent tying arrangement . *See, e.g., Texas Instruments,*

The alternative approach to a finding of *per se* illegality is a finding of illegality under the "rule of reason." In *Virginia Panel*, the Federal Circuit enunciated a "rule of reason" approach to patent misuse defenses that are neither in the *per se* category or specifically excluded by § 271(d) . The rule of reason analysis requires a preliminary step of examining the "scope of the patent grant," as follows:

> When a practice alleged to constitute patent misuse is neither *per se* patent misuse nor specifically excluded from a misuse analysis by § 271 (d), a court must determine if that practice is "reasonably within the patent grant, *i.e.*, that it relates to subject matter within the scope of the patent claims." If so, the practice does not

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Inc. v. Hyundai Electronics Industries, Ltd, 49 F.Supp.2d 893, 910-11 (E.D.Tex.,1999) ("[T]he legislative history of the 1988 Patent Misuse Reform Act supports the death of *per se* patent misuse due to tying .. .."). This view misperceives what Section 271(d)(5) does . Section 271(b)(5) does not eliminate the *per se* approach's presumption that certain arrangements cause competitive harm when market power is present. *See Atlantic Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 342 (1990) ("The *per se* rule is a presumption of unreasonableness based on 'business certainty and litigation efficiency.' 'Once experience with a particular kind of restraint enables the Court to predict with confidence that the rule of reason will condemn it, it has applied a conclusive presumption that the restraint is unreasonable.'"). Rather, it merely codifies the evolution of the law from the use of a presumption of market power *by virtue of a patent*, as was done in *Loew's, supra*, to the use of a more thorough analysis into whether market power exists when substitutes for the patented product are available in the marketplace, as was later recognized in *Jefferson Parish, supra*. This view is consistent with the course followed by the Federal Circuit in *Virginia Panel, supra*, in holding that a "rule of reason" analysis should be applied *after* it is found that "a practice alleged to constitute patent misuse is neither *per se* patent misuse nor specifically excluded from a misuse analysis by § 271(d). . . .." See *Virginia Panel, supra*, 133 F.3d at 869.

> have the effect of broadening the scope of the patent claims and thus cannot constitute patent misuse. If, on the other hand, the practice has the effect of extending the patentee's statutory rights and does so with an anti-competitive effect, that practice must then be analyzed in accordance with the "rule of reason." Under the rule of reason, "the finder of fact must decide whether the questioned practice imposes an unreasonable restraint on competition, taking into account a variety of factors, including specific information about the relevant business, its condition before and after the restraint was imposed, and the restraint's history, nature, and effect."

Virginia Panel, supra, 133 F.3d at 869 (citations omitted).

In making a "rule of reason" analysis, the issue to be addressed is "whether a restraint is 'unreasonable,' *i.e.*, whether its anticompetitive effects outweigh its procompetitive effects." *Atlantic Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 342 (1990). "If this balancing shows that the restraint has a net procompetitive effect on competition or if the balance is even, the restraint is lawful." *See* American Bar Association Section on Antitrust Law, Antitrust Law Developments 60 (5th Ed. 2002); *also see Smith v. Pro Football, Inc.*, 593 F.2d 1173, 1183 (D.C. Cir. 1978) ("If, on analysis, the restraint is found to have legitimate business purposes whose realization serves to promote competition, the 'anticompetitive evils' of the challenged practice must be carefully balanced against its 'procompetitive virtues' to ascertain whether the former outweigh the latter. A restraint is unreasonable if it has the 'net effect' of substantially impeding competition.").

C. Patent Pooling

The form of tying arrangement that has given rise to Respondents' antitrust patent misuse defenses in this Investigation is the practice of packaging patent licenses known as "patent pooling." Respondents and the Staff allege that Philips, together with competitors Sony, Ricoh and Taiyo Yuden, pool their patents in the technology for manufacturing CD-Rs and CD-RWs in accordance with the standards set forth in the Orange Book and license them to manufacturers as a single package for a single royalty. A manufacturer cannot license any one patent in the pool without licensing all or at least some of the other patents in the pool. This practice, Respondents and the Staff maintain, constitutes a horizontal restraint that violates the antitrust laws under both *per se* and "rule of reason" approaches. *See* RPHB at 6; RPHRB at 9 and 16 ; SPHB at 27-28 (rule of reason); SPHRB at 3 (rule of reason).

The patent pool at issue in this investigation fits the following general description of such arrangements:

> Patent pools are private contractual agreements whereby rival patentees transfer their rights into a common holding company for the purpose of jointly licensing their patent portfolios. Pools can comprise as few as two patents, or as many as hundreds. Although the contractual provisions governing each pool are tailored to the technologies and patents at hand, patent pools generally share two common characteristics. First, patent pools consolidate the patent rights into a central, independent entity. In many cases, the entity will be a partnership or limited liability corporation. The entity then sells licenses to the portfolio of pooled patents, often as a single package.

Steven C . Carlson, "Patent Pools and the Antitrust Dilemma," 16 Yale J . on Reg. 359, 367-68 (1999) (footnotes omitted) ("Carlson, *Patent Pools*").

According to the 1995 joint antitrust guidelines of the U.S. Department of Justice and the Federal Trade Commission on the licensing of intellectual property, patent pools "may provide procompetitive benefits by integrating complementary technologies, reducing transaction costs, clearing blocking positions, and avoiding costly infringement litigation." U.S. Dep't. of Justice and Fed. Trade Comm., *Antitrust Guidelines for the Licensing of Intellectual Property* § 5.5, 1995 WL 229332 (April 6, 1995) ("DOJ/FTC Guidelines"). Patent pools can also have anticompetitive effects, according to the DOJ/FTC Guidelines. "For example, collective price or output restraints in pooling arrangements, such as the joint marketing of pooled intellectual property rights with collective price setting or coordinated output restrictions, may be deemed unlawful if they do not contribute to an efficiency-enhancing integration of economic activity among the participants." *Id.* When patent pools "are mechanisms to accomplish naked price fixing or market division, they are subject to challenge under the *per se* rule." *Id., citing United States v. New Wrinkle, Inc.*, 342 U.S. 371 (1952) (price fixing).

The DOJ/FTC Guidelines make clear that "[p]ooling arrangements generally need not be open to all who would like to join. However, exclusion from cross-licensing and pooling arrangements among parties that collectively possess market power may, under some circumstances, harm competition. [Citation omitted] . In general, exclusion from a pooling or cross-licensing arrangement among competing technologies is unlikely to have anticompetitive effects unless (1) excluded firms cannot effectively compete in the relevant market for the good incorporating the licensed

technologies and (2) the pool participants collectively possess market power in the relevant market." DOJ/FTC Guidelines§ 5.5.

The patent pools at issue here are combinations of the patents to CD-R and CD-RW technology held by Philips, Sony, Ricoh and Taiyo Yuden that manufacturers use in making CD-Rs and CD-RWs that conform to the specifications of the Orange Book. All six of the patents at issue in this investigation are included in the Philips patent pools. Dr. Kenneth R. Rubenstein, who refers to himself as a "neutral evaluator,"[49] has been retained by the pool to issue determinations about which of the patents in the Philips patent pools meet a particular definition of "essentiality."[50]

The similarity of this pool to the patent pools examined by the DOJ in their business review letters of the late 1990s, however, ends there. What follows is an analysis of how the practices followed by the Philips CD-R and CD-RW patent pools measure up against the patent misuse and antitrust

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[49] It is interesting to note in this regard that Dr. Rubenstein's description of himself as a "neutral evaluator" avoids the DOJ's stronger description of the necessary decisionmaking authority in patent pools as that of "an *independent* expert as an *arbiter* of essentiality." *See* CX-355 (MPEG-2 Business Review Letter at 5) (emphasis added).

[50] In issuing his determinations on a patent's "essentiality" for compliance with the Orange Book, Dr. Rubenstein includes both "technical" and "commercial" essentiality. "Commercial" essentiality, or "essentiality as a practical matter," means to Dr. Rubenstein that "the patent covers something that's not explicitly in the [Orange Book], but as a practical matter you need the patent to do something that is in the [Orange Book]." Rubenstein Tr. 2182 :6-23 . In fact, in practice, Dr . Rubenstein used a much broader or more liberal definition of commercial essentiality. *See* p .185-213 *infra*.

criteria set forth earlier herein, under both a "*per se*" and "rule of reason" analysis .

D. *Per se* Analysis

Respondents contend that a *per se* violation is made out by Complainant's maintenance together with its licensor-partners of the Philips CD-R and CD-RW patent pools. *See* RPHRB at 9. Complainant rejects Respondents' *per se* arguments. *See* CPHRB at 2-3. The Staff implicitly assumes in its briefs that the instant case does not fall into a *per se* category. *See* SPHB at 18 and 27-28.

According to the Complainant, 35 U.S.C. § 271(d)(5) and certain court cases have established that "[t]ying is not a *per se* offense." *See* CPHRB at 2, *citing* 35 U.S.C. § 271(d)(5) and its legislative history; *NCAA v . Board of Regents*, 468 U.S. 85, 104 n.26 (1984); *Windsurfing International Inc. v. AMF, Inc.*, 782 F.2d 995, 1001 (Fed. Cir. 1986). That is an inaccurate reading of Section 271 (d)(5) and the case law of *per se* tying arrangements. As explained earlier, Section 271 (d)(5) does not eliminate the *per se* approach to examining an antitrust-based patent misuse defense; it only codifies the prevailing case law that disfavors a presumption that patent ownership equates with the element of market power, an essential part of the *per se* analysis. The cases cited by Complainant do not yield a different result ; rather, they support the use of a *per se* analysis with tie-ins.[51]

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[51] To buttress its argument, Complainant takes a statement in a footnote in the Supreme Court's opinion in *NCAA, supra*, out of context. *See* CPHRB at 2-3. The full text of the footnote (with the portion quoted by Complainant underscored) is as follows:

Contrary to Complainant's contentions, tying arrangements, including tie-ins involving patent licenses, have long been recognized by the Supreme Court to pose a

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> Indeed, there is often no bright line separating *per se* from Rule of Reason analysis. *Per se* rules may require considerable inquiry into market conditions before the evidence justifies a presumption of anticompetitive conduct. For example, *while the Court has spoken of a 'per se" rule against tying arrangements, it has also recognized that tying may have procompetitive justifications that make it inappropriate to condemn without considerable market analysis. See Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S., at 11-12, 104 S.Ct., at 1558.

NCAA v. Board of Regents, supra, 468 U.S. at 104 n.26 (emphasis added). Taken in its entirety, this footnote cannot be read for the proposition that there is no longer any *per se* analysis for tying arrangements; rather, it must be read in conjunction with the rest of the opinion, which states in the text accompanying this footnote *that "[b]oth per se rules and the Rule of Reason are employed 'to form a judgment about the competitive significance of the restraint..'* [Citation omitted].... *Per se* rules are invoked when surrounding circumstances make the likelihood of anticompetitive conduct so great as to render unjustified further examination of the challenged conduct." *Id.* at 103-04 (emphasis added).

As for Complainant's citation in *Windsurfing International, Inc., supra,* to the Federal Circuit's footnoted *dictum* that "[r]ecent economic analysis questions the rationale behind holding any licensing practice *per se* anticompetitive," it too is taken out of context. The text of the opinion accompanying that footnote states as follows: "To sustain a misuse defense involving a licensing arrangement *not held to have been per se anticompetitive by the Supreme Court,*[footnote here] a factual determination must reveal that the overall effect of the license tends to restrain competition unlawfully in an appropriately defined relevant market." *Windsurfing International, Inc., supra*, 782 F.2d at 1001-02 n.9 (emphasis added). This statement presupposes that *per se* analyses of tying arrangements can be made, and if not, then a "rule of reason" analysis is appropriate.

danger of *per se* illegality under the antitrust laws. *See, e.g., Jefferson Parish, supra*,466 U.S. at 9 ("It is far too late in the history of our antitrust jurisprudence to question the proposition that certain tying arrangements pose an unacceptable risk of stifling competition and therefore are unreasonable '*per se*.'"); *International Salt Co. v. United States*, 332 U.S. 392, 396 (1947) ("Not only is price-fixing unreasonable, *per se*, [citations omitted], but also it is unreasonable, *per se*, to foreclose competitors from any substantial market."). [52] Accordingly, it is appropriate to review the facts of record in this investigation to determine whether they point to a *per se* showing of illegality.

1. Market Power

"[M]arket power in the relevant market " is the *sine qua non* of the antitrust analysis of a patent misuse defense. See 35 U.S.C. § 271(d)(5); *Jefferson Parish, supra,* 466 U.S. at 12. Market power has been described by the Supreme Court as "some special ability" on the part of the seller "to force a purchaser to do something that he would not do in a competitive market." *Jefferson Parish, supra,* 466 U.S. at 13-

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[52] Recently, another Administrative Law Judge found a tying arrangement involving patents to be illegal *per se* under the antitrust laws and therefore sustained a defense of patent misuse. *See Certain Set-top Boxes and Components Thereof,* Inv. No. 337-TA-454, Initial Determination (U.S.I.T.C., Public version, November 8, 2002). The Commission, on review of the Initial Determination in *Set-top Boxes*, took no position on its patent misuse findings. *See Set-top Boxes*, Notice of Decisions to Review In Part, Take No Position In Part, and Not Review In Part the Administrative Law Judge 's Final Initial Determination; Notice of Decisions to Affirm Three Rulings of the Administrative Law Judge; Notice of Determination of No Violation of Section 337 of the Tariff Act of 1930, 2002 WL 31874855 (U.S.I.T.C., August 30, 2002).

14. More specifically, the Supreme Court described market power in the following terms:

> Our cases have concluded that the essential characteristic of an invalid tying arrangement lies in the seller's exploitation of its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms. When such "forcing" is present, competition on the merits in the market for the tied item is restrained and the Sherman Act is violated.

Jefferson Parish, supra, 466 U.S. at 12.

As the Supreme Court further explained in *Jefferson Parish*, "[t]he same strict rule is appropriate in other situations in which the existence of market power is probable. When the seller's share of the market is high, or when the seller offers a unique product that competitors are not able to offer, the Court has held that the likelihood that market power exists and is being used to restrain competition in a separate market is sufficient to make *per se* condemnation appropriate." *Jefferson Parish, supra*, 466 U.S. at 17.

In the present case, Philips and its licensor-partners have united in their patent pools all of the patents that are technically and economically essential to manufacture CD-Rs and CD-RWs according to Orange Book standards, along with other patents that are admittedly non-essential to that activity. Although the existence of these patents alone would have been legally sufficient at one time to presume the existence of market power in the hands of these entities, *See Jefferson Parish*, 466 U.S. at 17 ("[I]f the government has granted the seller a patent or similar monopoly over a

product, it is fair to presume that the inability to buy the product elsewhere gives the seller market power"), 35 U.S.C. § 271(d)(5) has subsequently ruled out a mere presumption and requires a look into the presence of substitutes in the relevant market for the patented technology at issue.

The relevant market issue has two components: (1) the relevant product market; that is, those products that compete with one another; and (2) the relevant geographic market; that is, the location in which the competition is geographically defined . *See Brown Shoe Co. v. United States*, 370 U.S. 294, 324 (1962). It is to these questions that we now turn.

a. Relevant Product Market

The relevant product market is "the area of effective competition" within which a firm 's products compete. *AD/SAT v . Assoc. Press*, 181 F. 3d 216, 227 (2d Cir.1999) ("*AD/SAT*"), *quoting Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S. 320, 327 (1961). The market must include all products "that have reasonable interchangeability for the purposes for which they are produced- price, use and qualities considered." *United States v. E.I. A Pont de Nemours & Co.*, 351 U.S. 377, 404 (1956); *See AD/SAT, supra*, 181 F.3d at 227. Products are "reasonably interchangeable" where there is sufficient cross-elasticity of demand; *i.e.*, where consumers would respond to an increase in the price of one product by purchasing another product. *See AD/SAT*, 181 F.3d at 227.

In this case, the "relevant product market" has been defined by the parties on two different levels. One is the market for the products themselves; namely, CD-R/RWs . The other is the market for patent licenses in CD-R/RW technology. Respondents contend that the relevant product

market in this case is the market for "licensing of United States patents essential for production and/or sale of CD-R and CD-RW discs, respectively." *See* RPHB at 23. Similarly, the Staff argues that the relevant product market is that for "intellectual property related to the manufacture of CD-R/RWs." *See* SPHB at 10. Complainant counters that "a patent alone does not demonstrate market power" (quoting *In re Independent Sec. Orgs. Antitrust Litig.*, 203 F.3d 1322, 1325 (Fed.Cir. 2000)) and that "the appropriate market" in this instance is "the market for products." *See* CPHRB at 6 and 7 n.5. Each side of the dispute is considered separately.

(i) CD-R/RW Product Market

The evidence in this case conclusively establishes that CR-R/RWs and their associated readers and recorders are the predominant means utilized by modem personal computers to store and distribute programs and data cheaply and easily for transfer from one PC to another. CD-R/RWs have no substitutes that are reasonably interchangeable with them.

This lack of interchangeability is a function of both the prices, uses and quality of products that might conceivably be considered as substitutes for the storage and distribution function that CD-R/RWs fulfill for consumers. As Respondents' economic expert, Mr. Walter Bratic, testified at the hearing, floppy discs, MiniDiscs, audiocassettes and flash memory cards are not interchangeable with CD-R/RWs because they require individual players that a PC user having only a CD player would have to buy and install into the PC separately. *See* Bratic Tr. 1701:11-1702:18. Hard drives are not interchangeable with CD-R/RWs because they are not portable. *See* Bratic Tr. 1702:19-1703:8. E-mail is not interchangeable because it can distribute data but cannot store it. *See* Bratic Tr. 1703:9-15; McCarthy Tr. 2034:8-2035:18.

CD-R/RWs are rapidly surpassing the once-ubiquitous high-density floppy discs as the predominant means to store and distribute programs and data. *See* CX-618 (Slides 20 and 21). This is so because the capacity of a typical CD-R/RW, at around 700 MB, easily accommodates the large programs and data files used by present-day computers that floppy discs, with capacities of no more than 1.44 MB, cannot handle. *See* CX-50 at PA033204; McCarthy Tr. 2033:20-22. It defies logic to think that a PC user would forego purchasing a single CD-R/RW to transfer programs and data from one computer to another in favor of purchasing 400 or more floppy discs to accomplish the same task. *See* SPHB at 8; McCarthy, Tr. 2128:20-2129:7 (difference in storage capacity between CD-R/RWs and floppy discs would be a factor in considering whether products are in the same market). Indeed, one cannot substitute a floppy disc for a CD-R/RW to record music at all, because the capacity of a floppy disc is inadequate for the average three-minute song. *See* SPHB at 8. Further, CD-R/RWs are the only storage media that are backward compatible with the enormous installed base of CD players and CD-ROM drives in addition to the large installed base of CD-R/RW drives. *See* RPHB at 23. The lack of substitutability between CD-R/RWs and floppy discs is also shown by the evidence adduced at trial of the Princo Respondents' reaction to the steady decline in their CD-R/RW sales prices and profits. Rather than switch to manufacturing floppy discs, audio cassettes, hard drives and other products, the Princo Respondents continued to manufacture CD-R/RWs. When asked at the hearing whether the companies had considered switching to manufacturing audio cassettes or floppy discs, Mr. Jerry Chen of Gigastorage and Mr. Louis Chen of Princo said they had not. J. Chen Tr. 965:19-966:6; L. Chen Tr. 1051:21-1052:5.

At the hearing, Philips' economics expert, Dr. Thomas McCarthy, opined that the relevant market for CD-R/RWs should include a number of substitute products that he generally termed as "recordable storage media and devices," including floppy discs, blank audio cassettes and recordable/rewriteable DVDs. *See* SPHB at 8; McCarthy Tr. 1965:19-1966:1; 1972:9-16; CX-618 (Slide 21). In particular, Dr. McCarthy attempted to show at trial that although the prices per disc of CD-R/RWs compared to recordable/rewriteable DVDs differ considerably, the prices *per megabyte* of the storage capacities of both products are comparable to one another. McCarthy Tr. 1975:1-1976:19; CX-618 (Slides 14-16). Further, using his own business, National Economic Research Associates ("NERA"), as an example, Dr . McCarthy stated that NERA has DVD burners to put large sets of files or data on DVD for archiving, and those DVD burners can also burn a CD-R or CD-RW. McCarthy Tr. 1977:12-24. Thus, according to Dr. McCarthy, the interchangeability of recordable/rewriteable DVDs and CD-R/RWs is sufficient to combine at least those two products together into a single relevant product market.

Dr. McCarthy' s opinion testimony does not satisfy the standard for defining the products in the relevant market in terms of the "reasonable interchangeability for the purposes for which they are produced - price, use and qualities considered," or in terms of their "cross-elasticity of demand," as the law requires. *See United States v. E. I. du Pont de Nemours & Co., supra; AD/SAT, supra*. Dr. McCarthy admitted on cross-examination that he did not even consider cross-elasticities of demand between recordable/rewriteable DVDs on the one hand and CD- R/RWs on the other. *See* McCarthy Tr. 2031:11-19. Indeed, on cross-examination from the Staff, Dr. McCarthy opined that competitive conditions in the market for CD-Rs would not allow the price of CD-Rs to go up, and therefore he could not answer

whether an increase in the price of CD-Rs would cause CD-R disc users to switch over to recordable/rewriteable DVDs, the essential test of cross-elasticity of demand. McCarthy Tr.2153:5-20.

Dr. McCarthy's opinion testimony also failed to account for the relative "use and qualities" of recordable/rewriteable DVDs compared to CD-R/RWs; indeed, he suggested that there are substantial functional and qualitative differences between the two. Aside from the sizable price differential between recordable CDs and recordable/rewriteable DVDs in per-disc terms that Dr. McCarthy's data showed, which is the primary difference that consumers actually see on store shelves (*See* CX-618, slides 14-15), Dr. McCarthy had to concede the point raised by Mr. Bratic that DVDs will not play on CD players. McCarthy Tr. 2032:6-11; Bratic Tr. 1699:9-12. The prices that consumers typically pay for DVD players, as Mr. Bratic further showed, are ten times higher than prices for CD players. Bratic Tr. 1699:19-1701:2; RX-2362. Moreover, as Dr. McCarthy testified and his sales volume evidence shows, the "installed base [for recordable/rewriteable DVDs] is yet to really take off." McCarthy Tr. 1976:20-25; CX-618 (Slide 17). Dr. McCarthy's own forecast of global demand for recordable storage devices by technology type in 2003 shows a market share of only two percent for recordable and Rewriteable DVDs combined, compared to a market share of nearly 77 percent for CD-R/RWs combined. *See* CX-618 (Slide 21).

This lack of market penetration on the part of recordable/rewriteable DVDs belies Dr. McCarthy's price-per-megabyte evidence, because even if the price per megabyte of CD-R/RWs and recordable/rewriteable DVDs are as close as Dr. McCarthy says they are, consumers are nevertheless unlikely to buy more data storage capacity than they need given the current state of computer technology.

The low market share of recordable/rewriteable DVDs compared to that of CD-R/RWs at the present time suggests that consumers do not now need the excessive capacity of recordable/rewriteable DVDs. The example Dr. McCarthy gave of his own business environment at NERA confirms this state of affairs; even NERA, McCarthy admitted, does not have too many DVD burners "because we don't have a need to archive stuff a lot ...." McCarthy Tr. 1977:19-21. These facts lead to the conclusion that the relevant market should be determined on the basis of the most prevalent hardware that consumers now have in place, which are CD-R/RW players, not recordable/rewritable DVD players. *See Microsoft v . United States*, 253 F.3d 34, 52 (D.C. Cir. 2001) (relevant market for Intel-compatible PC operating systems did not include Mac PC operating systems because of the costs of acquiring the new hardware needed to run the Mac system); *See also Eastman Kodak Co. v. Image Technical Services , Inc.*, 504 U.S. 451, 481-82 (1992) (relevant market must be determined by choices available to owners of Kodak photocopiers, not owners of all photocopiers).

The foregoing analysis leads to the conclusion that, to the extent that the relevant product market in this case rests at the product level, it consists of the market for CD-R/RWs alone, with no close substitutes.

(ii) CD-R/RW Patent License Market

The law also recognizes that, in addition to products covered by patents, the relevant market for purposes of patent misuse may be made up of licenses for the intellectual property making up the products' technology. See 35 U.S.C. § 271(d)(5) (permitting patent misuse defenses based on tie-ins to lie in instances where the patentholder is shown to have "market power in the relevant *market for the patent*...."); DOJ/FTC Guidelines§ 3.2.2 ("When rights to

intellectual property are marketed separately from the products in which they are used, [footnote omitted], the Agencies may rely on technology markets to analyze the competitive effects of a licensing arrangement."); *also see Set-top Boxes, supra*, Initial Determination at 155-56 (relevant market recognized to be technology licensing market).

Here, the evidence demonstrates that Philips and its licensor-partners, Sony, Taiyo Yuden and Ricoh, sell licenses to their pooled patents that cover the essential technology for the manufacture of CD-R/RWs in accordance with Orange Book standards in a market that exists independently of the market for the sale of CD-R and CD-RW discs to retailers and distributors. During the period from 1998 to 2000, Philips and its licensor-partners licensed no more than approximately 50 percent of discs sold worldwide; today, that number has increased to approximately 65 percent . *See* Beune Tr. 2384 :19-2385:7. More than 100 companies have been licensed under the Philips CD-R/RW patent pools to make discs, and about 60-70 companies remain licensed today. Beune Tr. 2341:9-22. By contrast, in the corresponding product market for CD-R/RWs, Philips and its licensor-partners in 2002 had a worldwide market share of only 13 percent of sales for CD-R discs and only 10 percent of sales for CD-RW discs. CX-618 (Slides 27 and 28). The evidence also shows that current and historic royalty rates for the patent pool and the sales price of the discs bear little or no relationship to one another. *See* RX-2344, RX-2345.

Finding a relevant market in licensing patented technology is consistent with a trend followed by several major technology companies, including IBM, Ericsson, QualComm, InterDigital and Rambus, that are garnering an ever larger amount of their revenues from the licensing of

their intellectual property rights compared to their revenues for end-products. *See* Bratic Tr. 1913 :16-1916:14. Philips' practices are consistent with this trend, having received patent licensing revenues of approximately 500 million euros ($570 million) in 2002. Beune Tr. 2509:21-2510:12.

These facts lead to the conclusion that the licensing of essential CD-R/RW patented technology to manufacturers and the sale of CD-R/RW discs to retailers and distributors operate in separate and distinct markets. However, that fact alone does not answer the question of what the relevant market is. One must take into account "close substitutes - that is, the technologies or goods that are close enough substitutes significantly to constrain the exercise of market power with respect to the intellectual property that is licensed ." DOJ/FTC Guidelines § 3 .2.2.

The legislative history of 35 U.S.C. § 271(d)(5) provides a ready answer to this inquiry: "If a patented product is unique because no practical substitutes exist, the scope of the relevant market would be coextensive with the patent." 134 Cong. Rec. 32,295 (October 20, 1988) (remarks of Rep. Kastenmeier). As the analysis earlier herein of the relevant product market has established, CD-R/RWs are unique products that have no close practical substitutes. Consequently, the scope of the relevant market for licensing essential CD-R/RW patents is coextensive with the relevant product market for CD-R /RWs because manufacturers are constrained to enter into those licenses in order to make such unique products.

Accordingly, to the extent that the relevant market in this case rests at the patent licensing level, it consists of the market for licensing the essential patents for the manufacture of CD-R/RWs in accordance with Orange Book standards, there being no close substitutes for such products.

b. Relevant Geographic Market

Respondents contend that the relevant geographic market for the patent licensing relevant market that they espouse is the United States because that is the country in which the patents of the pool apply. *See* RPHB at 25. Licenses to patents in other countries would not provide manufacturers the ability to sell their products in the United States, Respondents argue, and therefore are not part of the same market. *Id.* The Staff, on the other hand, contends that the relevant geographic market for the same patent licensing relevant market is the global market, because manufacturers of CD-R/RW discs exist in many countries around the world. *See* SPHB at 10. Complainant discredits both arguments on the ground that both are based solely on the fact that Philips owns patents, but patents do not constitute a relevant market and do not by themselves demonstrate market power. *See* CPHRB at 6, *citing Integraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1355 (Fed.Cir. 1999) ("*Integraph* "); *B. V. Optische Industrie De Oude Delft v. Hologic, Inc.*, 909 F.Supp. 162, 172 (S.D.N.Y. 1955) ("*Oude Delft*").

"A geographic market is an area of effective competition where buyers can turn for alternate sources of supply." *Morgan, Strand, Wheeler & Biggs v . Radiology, Ltd.*, 924 F.2d 1484, 1490 (9th Cir. 1991) (internal quotation marks omitted); *accord, Independent Ink, Inc. v. Trident, Inc.*, 210 F.Supp.2d 1155, 1171 (C.D.Cal. 2002) ("*Independent Ink*") ("Geographic market definition is based upon the market area in which the seller and its competitors operate and consumers can practicably turn for supplies." (internal quotation marks omitted)). For a product market, a determination of the relevant geographic area typically involves analyzing such factors as "price data and such corroborative factors as transportation costs, delivery

limitations, customer convenience and preference, and the location and facilities of other producers and distributors." *Independent Ink, supra.*

Unlike a commercial product market, however, a patent licensing market such as the one advocated by Respondents and the Staff here does not deal with such factors. A licensing pool of U.S. patents is "sold" for a price - the royalty - to manufacturers from any country who wish to make, use or sell their products *in* the United States. The market for licenses for U.S. patents essential to the manufacture, use and sale of CD-R/RWs in the United States sets no price at all for the right to make, use or sell CD-R/RWs *outside* of the United States. As one court has observed, "[The] United States is the only geographic market where a U.S. patent can be misused in a manner leading to antitrust violations . . . ." *Buehler AG v . Ocrim S.p.A.*, 836 F.Supp. 1305, 1325 (N.D. Tex. 1993) (internal quotations omitted), *affd*, 34 F.3d 1080 (Fed.Cir. 1994) (Table) (unpublished opinion). Consequently, the geographic market for patent licenses for CD-R/RW (Orange Book) technology is limited to the United States.

On the other hand, viewing the relevant market as that for CD-RJRW discs themselves, the competitors being compared in that market for the purposes of this investigation are those manufacturers who are licensed by the pool versus those who are not. Purchasers of CD-R/RW discs; *i.e.*, retailers and distributors, can look worldwide for alternative sources of supply. Manufacturers of CD-R/RW discs exist in many countries around the world. *See* Beune Tr. 2501:12-20 (Moser Baer manufactures in India); J . Chen Tr. 828:17-24; L . Chen Tr. 973:2-8 (the Princo Respondents manufacture in Taiwan, Switzerland and Germany); Wieghaus Tr. 341:25-342 :9 (Mitsui manufactures in the United States). Unlicensed sales still represent 35 percent of

the CD-R/RW market. *See* Beune Tr. 2384 :19-2385:7. It is true that only manufacturers who are licensed under the U.S. patents can legally serve U.S. customers, but from a practical standpoint, as Complainant suggests (*See* CPHB at 33 n.18), the unlicensed seller does not stop selling until legal action puts a stop to it.

Complainant's citations to *Integraph* and *Oude Delft* have no relevance to the geographic market issue. In the first case, Integraph, a manufacturer of graphics work stations, sued Intel, a manufacturer of microprocessors, for patent infringement and antitrust violations. Integraph's product did not compete directly with Intel's, but Integraph claimed that its "Clipper" patent covered microprocessor technology and therefore the two companies "competed" with one another in the relevant market for microprocessors. *Integraph, supra.* The Court of Appeals disagreed:

> the patent grant is a legal right to exclude, not a commercial product in a competitive market. Intergraph abandoned the production of Clipper microprocessors in 1993, and states no intention to return to it. Firms do not compete in the same market unless, because of the reasonable interchangeability of their products, they have the actual or potential ability to take significant business away from each other.

Id. Integraph offers no guidance in determining what the relevant geographic market is here. Its point that the Integraph patent was not a "commercial product" that competed in the relevant market for microprocessors has no bearing to the issue at hand . Here, unlike *Integraph,* no one claims that any *patent* competes with any *product.* Rather, as the Staff points out in its post-hearing reply brief, the technology licensing market is in *licenses* for essential

patents, which must be viewed for these purposes as tantamount to "products" that have a "price;" namely, the royalty. *See* SPHRB at 15. Also unlike Integraph, there is only one "product" in this market with no competitor – a license for the essential patents of the pool. In the same vein, the product market for CD-R/RWs also at issue here does not pit patents in competition with products. Only commercial products - CD-R/RWs themselves – compete with each other in that market, and the competitors being compared in that market for the purposes of this investigation are those manufacturers who are licensed by the pool and those who are not.

Oude Delft equally says nothing about the geographic market issue. In that case, Hologic sued Oude Delft partly on the ground that the latter's patents in chest equalization radiography equipment were procured from the PTO by fraud and constituted an attempt to monopolize in violation of the antitrust laws. In dismissing Hologic's antitrust allegation for failure to define a relevant market, the court rejected Hologic's contention that Oude Delft wanted to block its efforts to market its product in the United States by obtaining fraudulent patents. *Oude Delft ,supra.* "[I]t is obvious that merely obtaining a patent for a product does not create a product market for antitrust purposes," the court held. *Id.* This holding merely pointed out that Hologic's contention missed the point of defining a relevant market; it did not establish a legal principle that patents cannot constitute relevant markets, as Complainant incorrectly reads the case.

All told, the evidence demonstrates that at the product level, the relevant geographic market for CD-R/RWs is worldwide, but the relevant geographic market for licensing the essential U.S. patents for the manufacture of CD-R/RWs

in accordance with Orange Book standards is the United States.

2. The Extent of Philips' Market Power in the Relevant Markets

As stated earlier herein, market power is "some special ability" on the part of the seller "to force a purchaser to do something that he would not do in a competitive market." *Jefferson Parish, supra*, 466 U.S. at 13-14. It is generally regarded as "the ability profitably to maintain prices above, or output below, competitive levels for a significant period of time." DOJ/FTC Guidelines § 2.2. Ordinarily, market power can be inferred from the seller's possession of a predominant share of the market. *Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451, 464 (1992).

In this case, we must look at whether Philips and its fellow licensors in the CD-R/RW licensing pools possess market power in the two relevant markets being examined: (i) the worldwide product market for CD-R/RW discs; and (ii) the United States market for licensing the essential U.S. patents for the manufacture of CD-R/RW discs in compliance with Orange Book standards.

a. The Product Market for CD-R/RW Discs

In the worldwide product market for CD-R/RW discs, the undisputed evidence presented by Complainant's economics expert, Dr. McCarthy, shows that worldwide demand, supply and manufacturing capacity for CD-R discs grew rapidly during the years 2000-2002 to the point where, in 2002, there was a worldwide demand for nearly six billion CD-R discs and an available supply of nearly 8 billion discs out of a total manufacturing capacity of over 10 billion discs. McCarthy

Tr. 1962:21-1963 :22; CX-618 (Slide 8). The evidence thus shows that over that entire time period, available supply consistently exceeded demand and there was always excess manufacturing capacity. The evidence also shows that during 1999-2001, wholesale and retail prices for CD-Rs and CD-RWs fell steadily. *See* McCarthy Tr. 1956:17-1958:7; CX-618 (Slides 5 and 6). Falling product prices over time is a typical pattern in the electronics industry. *See* Smith Tr. 1486:19-25. The evidence also shows that, following a rapid increase during the late 1990s, the number of manufacturers of CD-R discs peaked in 2000 and has fallen in the years thereafter. McCarthy Tr. 1965:5-11 ; CX-618 (Slide 9); CX-330.

As for the worldwide market share for the manufacture and sale of CD-R/RW discs, Philips and Sony have held only a minor share of the world's manufacturing output of CD-Rs that, combined with Taiyo Yuden's output, reached to approximately 8 .8 percent in 2002. *See* McCarthy Tr. 1986:5-13; CX-618 (Slide 24). With respect to the manufacturing output for CD-RWs, the collective share of Philips, Sony and Ricoh amount to approximately 2 percent in 2002. *See* McCarthy Tr. 1986:24-1987:6; CX-618 (Slide 25). In terms of worldwide sales to retail outlets, the sales of CD-R discs by Philips, Sony and Taiyo Yuden amount to approximately 13 percent in 2002, and the sales of CD-RW discs by Philips, Sony and Ricoh amount to approximately 10 percent . *See* McCarthy Tr. 1989:22-1990:8; CX-618 (Slides 27 and 28). Thus, the choice of Philips, Sony, Taiyo Yuden and Ricoh to license manufacturers of CD-Rs and CD-RWs represents a decision to profit in a significant way from royalty revenue, rather than to seek major profits from the manufacture and sale of discs.

During the years 1998-2000, the percentage of CD-R and CD-RW discs that were sold in which no royalties were paid

to the patent pool, despite their ostensible infringement of those patents, amounted to approximately 50 percent. Beune Tr. 2384:19-25. Since 2000, that percentage has dropped to about 30-35 percent. Beune Tr. 2385:1-7. This drop evinces a concerted effort on the part of Philips and its licensor-partners to sign up manufacturers to their patent pools . This effort coincided with the period during which manufacturers of CD-R/RW discs were exiting the worldwide market. Prices have continued their inevitable pattern of falling despite the success of Philips and its licensor-partners in signing up over 70 percent of the world's supply of CD-R discs under the pool (*See* RX-1903C (listing current CD-R licenses) and CX-330C (showing percent market shares for CD-R manufacturers)).

The foregoing evidence of the relatively minor impact of Philips and its fellow licensors in the worldwide product market for CD-R/RW discs and on disc prices does not conclusively demonstrate that they possess market power in that market .

b. The Licensing Market for Essential U.S. CD-R/RW Patents

In the United States market for licensing essential U.S. patents for the manufacture and sale of CD-R/RW discs in compliance with Orange Book standards, the situation is quite different. Philips, Sony, Taiyo Yuden and Ricoh are horizontal competitors in the patent licensing market. As Philips has stated in its initial pleadings and as economics experts for both Complainant and Respondents confirmed, no one can manufacture or sell CD-R or CD-RW discs legally in the United States without taking a license to the Philips patents. *See* McCarthy Tr. at 2038 :3-3039:11 ; 2039 :25-2040 :15 ; Bratic Tr. 1705:25-1706:11; Complaint ¶¶ 2.4 and 2.5. All CD-Rs and CD-RWs sold in the marketplace

must comply with Orange Book standards. *See* Lang Tr. 234:19-25. Licenses to at least some of the Philips patents are essential to the manufacture of CD-R/RWs that are in technical and practical compliance with the Orange Book.

In the patent licensing market, Philips and its licensor-partners have maintained royalty rates above competitive levels for a significant period of time, despite the fall in CD-R/RW disc prices that have squeezed manufacturer profits. The minimum royalty rates under the CD-R patent pools range from 4.5 cents to eight cents (10 yen) depending which royalty rate program is implemented.[53] These rates have been maintained despite the fall in CD-R/RW prices to the point where those royalty rates now represent between 50 and 70 percent of today's average net selling price in the industry. Bratic Tr. 1725:14-1727:11; RX-2348C; RX-2349C.

Subsequent to the 2001 Taiwan FTC decision finding the Philips patent pools to be illegal under Taiwan law, Respondent Gigastorage was able to enter into individual license agreements with Sony and Taiyo Yuden for the CD-R/RW patents in the pool that they owned. In comparison to royalty rates that Gigastorage was able to work out individually with Sony and Taiyo Yuden, the 10-yen rate demanded by the Philips CD-R patent pool is approximately

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[53] Under a so-called "compliance program," the Philips CD-R pool gives a licensee a CD-R royalty rate of 6 cents per disc for a license to the patents of all licensor-partners and 4 .5 cents for a Philips-only license. Smith Tr. 1416:7-1417:6, 1424:9-15; Beune Tr. 2342:22-2343:3; RX-992 (CD-R Disc Patent License Agreement, ¶ 5.02). In return for that rate, Philips requires the licensee to submit on a yearly basis a list of the equipment it uses to manufacture CD-R discs, and to demonstrate to Philips' satisfaction that the equipment originated from a Philips licensee; otherwise, the higher (10 yen) royalty rate applies. See Smith Tr. 1416:17-1417:6; RX-992 (CD-R Disc Patent License Agreement, 6.01).

[ ] times those individual rates.[54] *See* J. Chen Tr. 875:21-886:20; RX-1466; RX-1872; RX-1873; RX-1875 ; RX-1951. According to Roger S. Smith, Esq., Respondents' expert in intellectual property licensing practices in the field of information handling technology, such percentages are "outrageous" compared to industry norms, and would not allow a CD-R licensee to stay in business. Smith Tr. 1417:7-15, 1419:12-24. Nonetheless, Philips and its licensor-partners have signed up more than 100 manufacturers to the patent pools and approximately 60-70 remain signatories today. Beune Tr. 2341:9-22.[55] Further, if Philips is successful in this Section 337 investigation, it will win either a general or a limited exclusion order as well as cease-and-desist orders against Respondents, which by their nature restrict output that is imported into the United States market.

Thus, the Philips CD-R and CD-RW patent pools constitute horizontal agreements among competitors to control the royalty rate for U.S. patents that are essential for the manufacture and sale of CD-R/RW discs in the United States market, agreements that indisputably afford them the market power of an absolute monopoly.

3. *Per se* Misuse

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[54] It is interesting to note in connection with Gigastorage's agreement with Taiyo Yuden that the actual royalty rate paid by Gigastorage is reflected in a supplemental "side letter" agreement rather than the main license agreement between the parties. *See* Smith Tr. 1482:5-13. Such agreements, Smith opined, "are often used when one does not want the world to see the end result." Smith Tr. 1482:12-13 .

[55] It is to be noted, however, as explained later herein, that many of these manufacturers pay lowered royalties or no royalties because they receive special considerations of one kind or another that have nothing to do with the standard CD-R/RW patent license agreements. *See* p. 180-182, *infra*.

In characterizing conduct under the *per se* rule, "our inquiry must focus on whether the effect and, here because it tends to show effect, the purpose of the practice [is] to threaten the proper operation of our predominantly free-market economy - that is, whether the practice facially appears to be one that would always or almost always tend to restrict competition and decrease output . . . or instead [is] one designed to increase economic efficiency and render markets more, rather than less, competitive." *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1, 19-20 (1979) ("*Broadcast Music*").

a. The Royalty Rate as a Price-Fixing Restraint

The Philips CD-R and CD-RW patent pools, in all of their forms, require fixed royalty rates for the licensing of the patents in the pool, regardless of whether they are essential or non-essential to the manufacture and sale of CD-R/RW discs according to the Orange Book. For CD-Rs, the fixed royalty rate is officially equal to three percent of the net selling price per disc or 10 yen (approximately 8 cents U.S.), whichever is greater. J. Chen Tr. 916:15-18. Although the three-percent rate determined the relevant royalty in the early 1990s when CD-R prices were high enough to result in royalties in the order of 20 to 25 cents per disc, prices in recent years for CD-R discs have fallen to the point where only the 10-yen minimum is the relevant per-disc royalty. Beune Tr. 2339:20-22, 2342:2-21.[56] For CD-RWs, the pool

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[56] As mentioned earlier, for manufacturers who agree to enter into a "compliance program" that requires the auditing of a manufacturer's sales reports in order to assure accuracy in reporting sales data, the CD- R pool gives a CD-R royalty rate of 6 cents per disc for a joint license and 4 .5 cents for a Philips -only license. Smith Tr. 1416:7-1417:6; Beune Tr. 2342:22-2343:3; RX-992.

partners initially offered a joint royalty rate for all patents in the pool of three percent of the net selling price or 15 cents per disc, whichever was higher; now, that minimum rate is 10 cents per disc. Beune Tr. 2343:10-2344:1.

There are several problems with the royalty arrangements of the Philips CD-R and CD-RW patent pools from the standpoint of a *per se* review. Complainant does not contest the opinion testimony of Respondents' expert on intellectual property licensing, Roger S. Smith, to the effect that, as a general rule in the data storage industry, a royalty is considered reasonable if it "produces income for the licensor and still allows the licensee to operate at a profit so that he can continue to manufacture, use, lease, or sell products that are covered." Smith Tr. 1409:12-17. In Smith's experience in negotiating royalty rates for IBM patents in the information handling systems area, license rates of one percent or less are normal for an individual patent. *See* Smith Tr. 1409:18-25. In licensing multiple IBM patents, Smith found that each patent could add one percent to the total royalty rate, but only up to a maximum of five percent. Smith Tr. 1410:1-20. By contrast, the current 6-cents per disc "compliant" royalty for a license to the entire CD-R patent pool amounts to an effective royalty rate of 40 percent of the disc selling price. Smith Tr. 1417:7-15. Obviously, the "non-compliant" royalty rate of 8 cents per disc (10 yen) represents a higher percentage. Gauged by the measure enunciated by Mr. Smith, the royalty rates for the Philips CD-R and CD-RW patent pools are excessive enough to force a manufacturer taking such a license to be priced out of the market for CD-R/RW discs and to leave the industry.[57]

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[57] Mr. Smith admitted on cross-examination that his knowledge about the amount of profits that CD-R/RW manufacturing licensees of the Philips patent pool have been making is limited to the experience of Respondents

The royalty rate that Philips now offers to license its own pooled patents alone is no better. In 2001, after the Taiwan Federal Trade Commission declared the Philips CD-R patent pool to be illegal under Taiwanese law, Respondents Princo and Gigastorage were able to secure individual licenses from Sony and Taiyo Yuden for their own U.S. patents for CD-Rs in the pool at far lower royalty rates than the combined pool rates. *See* Smith Tr. 1418:24-1419:4, 1422:1-23, 1423:23-1424:8; RX-1873, RX-1875, RX-1951 (Gigastorage agreements); RX-1757, RX-1865, RX- 1866 (Princo agreements). Philips at that time also started offering separate licenses to its own CD-R patents in the pool. Smith Tr. 1418:24-1419:4. However, in so doing, Philips structured the royalty for its own CD-R patents under the separate license so that it would receive a greater amount from such individual licenses than it would under the pool licenses. Smith Tr. 1425:21-1427:18; RX-2367.[58] This arrangement results in a higher royalty to Philips and also exceeds industry norms. Smith Tr. 1413:14-24.

The concerted pricing policies of Philips and its licensor-partners follows that of a horizontal combination to fix prices

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Princo and Gigastorage. *See* Smith Tr. 1440:20-1441:15. Although Complainant argues that so limited an examination on Smith's part is flawed, Complainant has not produced any countering evidence to show that any other manufacturing licensee of the pool who is paying the full royalty rate is making a profit on the sale of its CD-R/RWs .

[58] Under the original CD-R patent pool, Philips receives [ ] percent of the pool royalty proceeds while Sony and Taiyo Yuden [ ]. This puts Philips' share of the 6-cent "compliant" pool royalty rate at approximately [ ] cents per disc. By contrast, under the separate license of its own patents, Philips receives a royalty of approximately [ ] cents per disc without having to share this amount with Sony and Taiyo Yuden. Smith Tr. 1425:21-1427:18; RX-2367 .

at higher than competitive levels, which has long been considered by the law to be illegal *per se*. "Price fixing in commerce, reasonable or unreasonable, has been considered a *per se* violation of the Sherman Act." *See United States v. New Wrinkle, Inc..,* 342 U.S. 371, 377-78 (1952) (patent pooling agreement that fixed minimum prices at which all licensed manufacturers might sell amounts to "[p]rice control through cross-licensing [that] was barred as beyond the patent monopoly."); *also see* DOJ/FTC Guidelines § 5.1, Example 9 (horizontal combination of consumer electronic product manufacturers to assign competing, non-blocking product patents to jointly-owned firm for licensing to other manufacturers at established royalty rates "likely would result in higher royalties and higher goods prices than would result if the owners licensed or used their technologies independently," possibly resulting in *per se* illegal horizontal price fixing); § 5.5 ("When cross-licensing or pooling arrangements are mechanisms to accomplish naked price fixing or market division, they are subject to challenge under the *per se* rule.")

This price-fixing scheme strays considerably from the competitive benefits of patent pools that the Department of Justice has identified in its guidelines and business review letters; namely, that they "may provide competitive benefits by integrating complementary technologies, *reducing transaction costs*, clearing blocking positions, and avoiding costly infringement litigation" at royalty rates that "are likely to constitute *a tiny fraction*" of product prices. CX-355 (MPEG-2 Business Review Letter at 11) (internal quotation marks deleted; emphasis added); DOJ/FTC Guidelines § 5.5. In the opinion of Respondents' expert, Mr. Smith, a manufacturer cannot profitably make CD-R/RW discs for sale in the United States at the royalty rates demanded by Philips, either for the Philips-only patent pool or for the pool

of Philips and its licensor-partners. *See* Smith Tr. 1419:17-24, 1433:25-1434:13.[59]

b. Price Discrimination

Not only do the Philips CD-R and CD-RW patent pools constitute price-fixing; they are also economically discriminatory in nature and application. Inherently, "[a]

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[59] It is not sufficient to counterargue, as Complainant does, that its pool royalty rates are no worse as a percentage of CD-R/RW disc prices than the combined royalties paid by DVD disc manufacturers under the three DVD patent pools that were approved by the DOJ in its Business Review Letters. Those royalties represent a total of 33% of the current net selling price of DVD discs. *See* Beune Tr. 2399; *also see* CX-355 at p. 6 n.20; CX-357 (3C DVD Business Review Letter at p. 5); CX-358 (6C DVD Business Review Letter at p. 6). This argument misses the point of the antitrust analysis that was conducted in those Business Review Letters and that must be conducted here. Two of the three Business Review Letters analyzed the likelihood that the patent pool royalty rates in question would facilitate collusion among licensors or licensees in any market, and in both instances the DOJ concluded that the contemplated royalty rates were "*sufficiently small relative to the total costs of manufacture*" to render collusion unlikely. *See* CX-357 (3C DVD Business Review Letter at p. 11); CX-358 (6C DVD Business Review Letter at PHX009134) (emphasis added). In the third MPEG-2 Business Review Letter, the DOJ concluded even more definitively that "since the contemplated royalty rates are likely to constitute *a tiny fraction of MPEG-2 products' prices, at least in the near term,*" collusion was unlikely. CX-355 (MPEG-2 Business Review Letter at 11 (emphasis added). By contrast, the evidence of record here shows that the patent pool royalty rates charged by Philips and its licensor-partners for CD-R/RWs are *significant* product price components that currently equal [ ] of Respondents' costs of manufacture. *See* L. Chen Tr. 1009:11-1010:8; CX-183C; RX-1945C (Princo and Gigastorage's 2002 CD-R manufacturing costs were between [ ] cents compared to the "compliant" pool royalty rate of 6 cents). Even if these costs were much higher in the early 1990s when the patent pools began, they are no longer and do not excuse Philips' insistence on a royalty rate that amounts to far more than a "tiny fraction" of CD-R/RW selling prices.

license fee based upon a percentage of gross revenue is discriminatory in that it grants the same number of rights to different licensees for different total dollar amounts, depending upon their ability to pay." Cirace, "*CBS v. ASCAP*: An Economic Analysis of A Political Problem," 47 Ford.L.Rev. 277, 288 (1978*), quoted in Broadcast Music, supra*, 441 U.S. at 31 n.17 (Stevens, J., dissenting). As an "all-or-nothing" patent pool, the one-rate royalty price structure imposed on manufacturers by Philips and its licensor-partners is totally unrelated to factors that would normally affect the royalty rate of a patent in a competitive market, such as the associated costs or quality or quantity of the individual patents in the pool. Such a structure requires licensees to buy more patent rights than they want at a price that may well be far higher than what they would choose to pay for each patent in a competitive system, which is "a classic example of economic discrimination." *See Broadcast Music, Inc., supra*,441 U.S. at 31-32 (Stevens, J., dissenting).[60]

The inherently discriminatory nature of this "all-or-nothing" royalty scheme is aggravated by the discriminatory manner in which Philips and its licensor-partners have applied the royalty to different manufacturers. Specifically,

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[60] This pricing scheme can be contrasted with the type of industry licensing practice followed by IBM, the world's largest holder of U.S. patents, as described at trial by Respondents' expert on that subject, Roger S. Smith. As Mr. Smith testified, IBM's licenses of its information storage technology patents are typically priced at royalty rates of one percent per patent, and when licenses to multiple patents are granted, the one percent rate is cumulated for each patent in the package until a maximum of five percent is reached. *See* Smith Tr. 1409:18-1410:14. Any number of patents can be chosen for licensing from IBM. *See* Smith Tr. 1472:9-20, 1490:3-8. Thus, unlike the Philips pool, IBM's licensees have a choice of acquiring rights only to patents that they need at royalty rates that reflect the number of patents they actually acquire.

Complainant neither agrees nor disagrees with Respondents' assertion that manufacturers who sell CD-R/RW discs to Philips or its licensor-partners pay no royalty on those discs to the pool members. J. Chen Tr. 858:3-859:22; Beune Tr. 2439:1-7, 2439:20-2440:12. The same is true for Respondents' contention that manufacturers who sell CD-R/RW discs to a company that has entered into a cross-license with Philips are not required to pay royalties on those discs. J. Chen Tr. 858:3-859 :22; Beune Tr. 2439:8-20, 2444:17-22, 2447:1-8, 2450:2-4.

Philips maintains that in the case of discs sold to cross-licensees, there are no royalties because the royalty has, in effect, already been paid "in kind" by the cross-license back to Philips. *See* Beune Tr. 2447:1-8. This contention has no merit, however, because there is no connection between the vendor relationship of a manufacturer selling discs to a company that cross-licenses with Philips on the one hand, and the cross-license relationship of that company to Philips on the other. The fact that a company purchasing CD-R/RW discs from an unrelated disc seller happens to be a cross-licensee of Philips for technology of any type, related or unrelated, does not translate into a "payment" by that seller of a royalty to Philips for the sale of those discs to that company. At best, this exemption of the seller from the obligation to pay a royalty is nothing more than a giveaway that Philips offers to CD-R/RW vendors of its cross-licensees in order to foster good business relations with the cross-licensees. As such, it discriminates economically against manufacturers who do not have the benefit of such a vendor relationship.

4. Conclusion on *Per se* Misuse

The foregoing restraints on the U.S. market for unique CD-R/RW patented technology rise to the level of a *per se*

antitrust violation because they are sure to "threaten the proper operation of our predominantly free-market economy" in a way that "would always or almost always tend to restrict competition" in such technology. Further, the patent pooling and licensing practices of Complainant have not been shown to "increase economic efficiency and render markets more, rather than less, competitive." *See Broadcast Music, supra*, 441 U.S. at 19-20.[61] Consequently, the pool patents at issue in this investigation are unenforceable by reason of patent misuse on the part of Philips .

E. "Rule of Reason" Analysis

Under the Federal Circuit's ruling in *Virginia Panel, supra,* where a *per se* analysis is inappropriate, a court evaluating a defense of patent misuse must first "determine if that practice is `reasonably within the patent grant, *i.e.*, that it relates to subject matter within the scope of the patent claims.'" *Virginia Panel, supra*, 133 F.3d at 869 [citation omitted]. If "the practice has the effect of extending the

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[61] The Supreme Court held in Broadcast Music that when a television network seeking to purchase a blanket license of music copyrights from a copyright pool at a single royalty rate had a "real choice" of obtaining individual licenses of those rights directly from composers in lieu of taking the blanket license, the blanket license fee was not illegal per se, but must instead be viewed under the "rule of reason." Broadcast Music, supra, 441 U.S. at 23-24. That principle, however, does not foreclose a per se analysis here. Manufacturers in the market for CD-R/RW discs are unable to negotiate a reasonable royalty rate with Philips for only particular blocking patents for the purpose of making CD-R/RWs that comply with Orange Book standards. This situation is not the same as that faced by CBS, which was free to license music from individual composers that were ready substitutes for one another. The licensing practice followed by Philips, by contrast, affords a manufacturer no "real choice," i.e., a choice of taking a pool license, or to leave the market altogether. Thus, a per se analysis is warranted notwithstanding the holding under the facts of Broadcast Music.

patentee's statutory rights and does so with an anti-competitive effect, that practice must then be analyzed in accordance with the 'rule of reason.'" *Id.* If it does not, however, then it cannot constitute patent misuse under the rule of reason. *See Id.*

"A rule of reason analysis requires a determination of whether an agreement is on balance an unreasonable restraint of trade, that is, whether its anti-competitive effects outweigh its pro-competitive effects." *Columbia Broadcasting System, Inc. v. American Soc. of Composers Authors and Publishers*, 620 F.2d 930, 934 (2d Cir. 1980), *cert. denied*, 450 U.S. 970 (1981), *citing National Society of Professional Engineers v. United States*, 435 U.S. 679 (1978); *Continental T. V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36 (1977); *Chicago Board of Trade v. United States*, 246 U.S. 231 (1918) . Furthermore, under the rule of reason the challenger of the alleged anticompetitive practice "bears the initial burden of showing that the challenged action has had an actual adverse effect on competition as a whole in the relevant market; to prove it has been harmed as an individual competitor will not suffice. Insisting on proof of harm to the whole market fulfills the broad purpose of the antitrust law that was enacted to ensure competition in general, not narrowly focused to protect individual competitors." *Capital Imaging Associates, P.C. v. Mohawk Valley Medical Associates, Inc* ., 996 F.2d 537, 543 (2d Cir.), *cert. denied*, 510 U.S. 947 (1993) (emphasis in original), *citing Atlantic Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 343-44 (1990).

1. Scope of the Patent Grant

The practice of pooling "essential" with "non-essential" patents under a license agreement is well-recognized under the antitrust laws to constitute an extension beyond the

statutory right to exclude. As the Third Circuit held in *American Securit Cc. v. Shatterproof Glass Corp.*:

> Each patent gives its owner a monopoly in respect to its disclosures, so much and no more. It is a grant of the exclusive right to manufacture, use and sell the invention which is disclosed. That invention is what the patent grant protects by the monopoly, not that invention plus some embellishment, improvement, or alternate product or process, which also happens to be patented. *See Motion Picture Patents Co. v. Universal Film Co.*, 1917, 243 U.S. 502, 511-513, 37 S.Ct. 416, 61 L.Ed. 871. Each monopoly must stand on its own footing. *Cf. United States v. Paramount Pictures*, 1948, 334 U.S. 131, 158, 68 S.Ct. 915, 92 L.Ed. 1260. [Footnote omitted] Mandatory package licensing is no more than the exercise of the power created by a particular patent monopoly to condition the licensing of that patent upon the acceptance of another patent but that is too much. The protection, or monopoly, which is given to the first patent stops where the monopoly of the second begins.

American Securit Co. v. Shatterproof Glass Corp., 268 F.2d 769, 777 (3rd Cir.), *cert. denied*, 361 U.S. 902 (1959).

The ruling of *American Securit* holds equally true today, as embodied in the expressed position of the U.S. Department of Justice in its business review letters that the pooling of "essential" with "non-essential" patents can "foreclose the competitive implementation options" that an industry standard like the Orange Book "has expressly left open." *See* CX-355 at 10.

What is more, the pools' bundling of patents that are "technically essential" with patents that are "essential as a practical matter," as Philips and its licensor-partners do,

extends the statutory scope of each patent in the pools as well. As will be addressed more fully later herein, the definition of "essential as a practical matter" that is used by the pools under this standard adds patents to the pools that do not technically cover specific parts of the Orange Book .Dr. Rubenstein, the "neutral evaluator," considers patents to be "practically" or "economically" essential to practicing the Orange Book standards when he determines that no viable alternative technology exists. However, his interpretation is applied in a manner that expands the statutory monopoly of technically essential patents in the Orange Book to innovations that really have nothing to do with the Orange Book, other than that they are found on an Orange Book-compliant CD-R/RW disc and are utilized by a large number of disc manufacturers. When the non-essential patents are added to the pools on the ground that they are "necessary as a practical matter," the statutory monopolies of the essential patents are impermissibly expanded. Adding these patents to the pools adds leverage to that patent's bargaining position in licensing negotiations with manufacturers, and unfairly competes with existing or emerging alternate technologies. It constitutes an inducement of an all-encompassing license to the totality of technology for making CD-R/RW discs, far beyond the scope of the Orange Book.

Consequently, Philips' bundling of "essential" with "non-essential" patents in its CD-R and CD-RW patent pooling license agreements, as well as its bundling of "technically essential" patents with patents that are improperly deemed to be "necessary as a practical matter," exceed the scope of its statutory right to exclude under its patents, and therefore must be further analyzed under the "rule of reason" to balance the procompetitive and anticompetitive effects of this practice.

2. Application of "Essentiality" Standards to Patents in the Pools

The decision whether a patent owned by Philips and its licensor-partners that involves CD-R/RW technology is to be included in the pools has been assigned by the pools to Dr. Kenneth Rubenstein, a patent attorney with a PhD. in physics, who decides whether the patent is "essential" and therefore included, or "non-essential" and therefore excluded. *See* Rubenstein Tr. 2172:22-2173:7. Dr. Rubenstein considers himself to be an "independent evaluator" of the essentiality of patents submitted to him for inclusion in the pools, not merely an attorney in an attorney-client relationship with Philips or any of its licensor partners. *See* Rubenstein Tr. 2171:24-2172:6, 2191:9-18. He has performed in a similar capacity with the MPEG-2 and DVD patent pools that were the subject of the Department of Justice's three business review letters. *See* Rubenstein Tr. 2173:8-14.

In deciding whether a patent is "essential," Dr. Rubenstein breaks his analysis into two subparts – whether the patent is "technically essential" and whether the patent is "essential as a practical matter" (also referred to by Dr. Rubenstein as "commercially essential"). *See* Rubenstein Tr. 2182:14-23. In one of his status reports to Sony rendering decisions on the essentiality of patents that Sony submitted to him for inclusion in the CD-R patent pool, Dr. Rubenstein gave his definition of a patent that is "technically essential" to the pool as being one wherein "at least one claim of the patent covers (i.e., is essential to implement) a portion of the Specifications for Recordable Compact Disc Systems, Part II: CD-R, Version 3.1, December 1998 ('the CD-R Standard')"; that is, the CD-R section of the Orange Book. *See, e.g.*, CX-563C (July 3, 2001 Rubenstein Status Report at PH065751).

Dr. Rubenstein further testified that if he decides that a patent is not "technically essential," he then decides whether the patent is nevertheless "essential as a practical matter" and should nevertheless be included in the pools on that basis. *See* Rubenstein Tr. 2184:15-25. To Dr. Rubenstein, "essential as a practical matter" means that the patent "must be shown to have at least one claim having no commercially reasonable alternative for implementing a portion of the CD-R Standard." CX-563C (July 3, 2001 Rubenstein Status Report at PH065751). However, he does not make this latter discussion on a technical basis, but rather Dr. Rubenstein looks at "what's going on in the marketplace" to see if substantially all of the relevant products practice the patent; if many do not, then he considers a commercially feasible alternative to exist and he finds the patent to be commercially non-essential as well as technically non-essential. *See* Rubenstein Tr. 2185:8-25.[62] Dr. Rubenstein

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[62] According to Dr. Rubenstein's status report to Sony mentioned earlier herein, when a patent is submitted by Philips or its licensor-partners for inclusion in the pools on the basis of essentiality as a practical matter, Dr. Rubenstein asks the submitting company for evidence that demonstrates such essentiality, which can come in several forms as follows:

> Preferably, evidence submitted should describe: the technical/commercial reason(s) why the invention claimed in the patent is the only practical way to implement part of the CD-R Standard; any known alternatives to the invention claimed ; and why these alternatives are not used. The evidence may also cover a study of the products available in the market to demonstrate that substantially all (*e.g.*, 90% or more) of the market infringes one or more claims of the patent. Other forms of evidence that similarly demonstrate pervasive use in the marketplace of the patent or patents may be provided.

CX-563C (July 3, 2001 Rubenstein Status Report at PH065751).

testified that approximately 50 patents have been submitted to him for review by Philips and its licensor-partners, and that of these, approximately 30 have been included in the pools as "technically essential" whereas two have been included as "essential as a practical matter." *See* Rubenstein Tr. 2195:20-2196:13; *also see, e.g.*, CX-563C; CX-564C; CX-565C; CX-569C; CX-572C.[63]

In support of the patent misuse defense raised in this investigation, Respondents and the Staff have called into question the essentiality of several patents in the pools. *See* RPHB at 9-21; SPHB at 23-27. In so doing, Respondents

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[63] Philips' CD-R/RW patent pool licensing agreements have a provision that requires a licensee that has an "essential patent " (*i.e.*, both "technically" essential and essential "as a practical matter") to grant such patent back to the licensors and other licensees on reasonable terms and conditions, including the payment of a royalty. Smith Tr. 1448:2-22; RX-992C (Philips CD-R Disc Patent License Agreement § 2.06, at PH077998 and PH077001). During the 1990s, however, this "grantback" provision required a grant back of all "pertinent" patents, not all "essential" patents. Bratic Tr. 1779:21-1780:23. Several CD-R and CD-RW licensees continue to operate under licenses with grantback clauses that require them to grant back all "pertinent" patents. *See, e.g.*, RX-1903C, tab 2 (¶ 2.07), tab 4 (¶ 2.07), tab 7 (¶ 2.07), tab 9 (¶ 2.07); Bratic Tr. 1781:3-6. There have never been any grantbacks under the CD-R or CD-RW disc license agreements. Bratic Tr. 1781:20-1782:4; Beune Tr. 2354 :4-7. Respondents contend that these grantback provisions are anticompetitive to the extent that they formerly required broad licenses to all "pertinent" patents rather than to the current requirement of all "essential" patents. Yet the lack of actual experience under this provision leaves insufficient evidence to analyze the procompetitive and anticompetitive effects of such grantback provisions. Moreover, the current provision tracks a similar provision requiring a grantback of "essential" patents that was reviewed by the DOJ in its 3C DVD business review letter and was not found to be anticompetitive. *See* CX-357 (3C DVD Business Review Letter at pp. 12-13). Accordingly, the impact of the grantback provisions on patent misuse is not further considered herein.

have offered the opinion of Dr. Steven McLaughlin, Respondents' expert in the field of optical data storage, who testified that several patents in the pools are non-essential. McLaughlin Tr. 1499:6-13.

According to Dr. Rubenstein, there are several differences between his definitions of "essentiality" and Dr. McLaughlin's that cause him to include more patents in the pools as "essential" than Dr. McLaughlin does. Rubenstein Tr. 2206:11-14, 2210:2-18. The principal difference, according to Dr. Rubenstein, is that he deems patents to be essential if they cover any section of the Orange Book, whereas Dr. McLaughlin does not count patents that cover technology identified in the Orange Book as only "recommended" or "optional." *See* Rubenstein Tr. 2209:15-25, 2211 :14-2214:11. Another difference Dr. Rubenstein perceived was that Dr. McLaughlin included theoretical alternative technologies as substitutes, not just alternatives that actually exist in the marketplace. *See* Rubenstein Tr. 2214:12-2216:25.

Although it is not mandatory for a CD-R or CD-RW disc to comply with some portions of the Orange Book, according to Dr. Rubenstein those provisions are nevertheless so integrated with other mandatory sections that it is best to view the Orange Book as a whole and to consider that manufacturer to be an infringer if a patent in the pool covers the optional technology. *See* Rubenstein Tr. 2295:8-2296:7; RX-407C (Orange Book CD-R Standard § 1.3 at PH015684) ("All parts in this document are mandatory unless they are specially defined as recommended or optional or informative.").

On the other hand, if the manufacturer practices a methodology that is identified in the Orange Book as an "alternative" or "optional" methodology that is *not* covered

by any patent in the pool, a manufacturer utilizing such optional technology would be in technical compliance with the Orange Book and would not be an infringer. Thus, in examining the Respondents' CD-R and CD-RW discs, it is important not to confuse "technical compliance" with the Orange Book, which includes both patented *and* non-patented components and methods, with infringement of a" technically essential " patent in the pool.

The breadth of Dr. Rubenstein's definition of essentiality "as a practical matter" is a significant factor in considering whether the Philips CD-R and CD-RW patent pools are unreasonably anticompetitive . In its business review letters, the Department of Justice noted that it understood "essentiality" to "encompass patents which are technically essential - *i.e.*, inevitably infringed by compliance with the specifications - and those for which existing alternatives are economically unfeasible." CX-357 (3C DVD Business Review Letter at 3 n.8). However, the DOJ expressed misgivings that the definition of essentiality "as a practical matter" could be interpreted too liberally:

> If our understanding of the criterion "necessary (as a practical matter)" is correct, [footnote omitted] then it appears that the Licensors intend to license through the pool only complementary patents for which there are no substitutes for the purposes of compliance with the Standard Specifications. Some uncertainty arises from this definition's imprecision: Unlike the MPEG-2 pool, which required actual technical essentiality for eligibility, this pool introduces the concept of necessity "as a practical matter." On its face, this latter standard is inherently more susceptible to subjective interpretation. [footnote omitted] An excessively liberal interpretation of it could lead to the inclusion of patent rights for which

there were viable substitutes. *In that event, the pool could injure competition by foreclosing such substitutes.*

CX-357 (3C DVD Letter at 10) (emphasis added).

The danger of this "subjective" interpretation of "essential as a practical matter" in this case is that it suppresses emerging technologies by gradually extending the reach of the pools beyond the Orange Book like a creeping vine. This risk is evident from Dr. Rubenstein's way of implementing this definition.

From Dr. Rubenstein's point of view, the procompetitive impact of his "commercial essentiality" criterion is that it provides licensees with all the patents they need to make an Orange Book compliant CD-R or CD-RW disc by including all patents found by Dr. Rubenstein to be used by virtually all of the CD-R/RW market in addition to those that are "technically essential" to Orange Book compliance. *See* Rubenstein Tr. 2279:7-16. However, from a manufacturer's point of view, this definition merely facilitates Dr. Rubenstein's hunt through the marketplace for infringers of the patent that he happens to be reviewing at the moment for inclusion in the pools. If Dr. Rubenstein finds a large number of infringers, he adds the patent to the pool by declaring that patent to be "essential as a practical matter" to the pool. The loose definition of "essential as a practical matter" permits Dr . Rubenstein to make this connection easily because, in reality, *any* innovation that is found on an Orange Book-compliant CD-R disc or CD-RW disc can be deemed "essential as a practical matter" if it exists on the disc, the disc works in an Orange Book-compliant CD reading and recording system, and the innovation has been adopted by a large number of manufacturers.

Connecting the pool to a patent in this way adds leverage to the licensing value of both the patent and the pool by permitting the patentholder and its fellow pool members to demand from licensees the high pool royalty rate that the subject patent might not be able to achieve on its own. This result is inherently anticompetitive because it tends to raise royalty rates above competitive levels. At the same time, although submitting a patent to Dr. Rubenstein for evaluation as to whether it can be included in the pool is voluntary on the part of the pool member (Rubenstein Tr. 2320:18-2321:14), the anticompetitive pressure that the pool exerts on outside competitors is strong because licensees are wedded to the pool technology and are reluctant to add to their royalty costs by using the competitor's non-pool innovation in place of what is licensed through the pool.

By contrast, Dr. McLaughlin's definition of "essential as a practical matter" includes "only complementary patents for which there are no substitutes," which is the same definition that the DOJ found acceptable. *See* CX-357 (3C DVD Business Review Letter at 10). Dr. McLaughlin's approach identifies viable substitutes in the marketplace and, if they are found at all, excludes the patent in question from the pools. This approach necessarily limits the pools to the technology of the Orange Book and does not extend its reach to innovations that fall outside of that which is essential to its practice.

As mentioned before, a "rule of reason" analysis of the pools' method for deciding whether technically non-essential patents are to be added to the pools as "essential as a practical matter" requires a balancing of the procompetitive effects against the anticompetitive effects and an evaluation of the actual harm to competition as a whole. *See* pp. 182-83. A primary anticompetitive effect of this practice that the Staff identifies is that a manufacturer's entering into a license

of a pool that includes nonessential patents as a package with essential patents serves as a disincentive for the manufacturer to license a technology that competes with improperly included non-essential patents in the pool. SPHB at 18, *citing Grid Systems Corp. v. Texas Instruments, Inc.*, 771 F.Supp. 1033, 1038 (N.D. Cal. 1991).

Complainant disputes the asserted anticompetitive effects on several grounds. First, Complainant asserts that the theory of Respondents and Staff that licensees that use nonessential patents in the pools for free (or without added royalty) will not use competing technology assumes that licensees know what technology they need and are using, and there is no evidence in the record that they do or that they choose the technology that their discs employ. CPHRB at 14-15. Rather, Complainant asserts, licensees enter the business by purchasing "off-the-shelf replicating machines, doing some "fine-tuning," and plugging them in, not by consciously choosing from alternative technologies. *Id.* Second, Complainant argues that there is no evidence in the record that licensees actually use the technology in the pools' "nonessential" patents or that they have a need to use such technology or its alleged alternatives. CPHRB at 15. Third, Complainant asserts that there is no evidence in the record that any alternative technology identified by Respondents has a cost that prohibits a licensee from switching to it from pool technology because of the cost already being incurred under the license. CPHRB at 16-17.

On balance, the anticompetitive effect on alternative technologies of the way that the pools determine which patents are "essential as a practical matter" and which are not outweighs the procompetitive effect of creating a convenient, broad package of patents for manufacturers to license. Dr. Rubenstein's analysis of essentiality "as a practical matter" is virtually arbitrary. Deciding that a patented CD-R/RW

innovation that falls outside the Orange Book should nevertheless be included in the pools solely because a large number of manufacturers happen to use it has an anticompetitive effect on alternative technologies in the marketplace. Dr. Rubenstein's rationale is directly contrary to the DOJ's definition of patents that are "essential as a practical matter" in its business review letters; namely, patents "for which there are no *substitutes* for the purposes of compliance with the Standard Specifications." CX-357 (3C DVD Letter at 10) (emphasis added). Under the DOJ's definition, if even a tiny fraction of the market uses an alternative to the non-Orange Book patent that is being considered for inclusion in the pools, it should *not* be included. As will be seen below in connection with Taiyo Yuden's Hamada patents that were included in the pools not as technically essential patents but only as "essential as a practical matter," Dr . Rubenstein has failed to follow this principle. [64]

Dr. Rubenstein claimed at trial that his methodology does not stifle innovation because he continually reviews his essentiality determinations and can remove a patent from the pools if competing alternative technologies have arisen that render the patent no longer "essential as a practical matter."

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[64] The pools' definition of the "technical" essentiality of a patent to the practice of Orange Book standards also leads to troublesome results. Philips gives licensees no information about which patents in the pool cover which aspects of the Orange Book. Thus, a manufacturer can mistakenly believe that all Orange Book methodologies require a patent license whereas in reality, some of them are not patented by Philips or its licensor-partners and require no license from them at all. Therefore, in evaluating whether a non-licensed manufacturer's product infringes the pool patents, therefore, care must be taken to assure that the product is being compared to a patent in the pool, not merely to a standard in the Orange Book.

See Rubenstein Tr. 2286:4-2287:7. Even if this practice were followed, however, it would nevertheless stifle innovation while the patent remains in the pools, and would not stop until Dr. Rubenstein were to decide (for whatever reason) to reassess his essentiality determination of that patent in light of new technology.

It is not enough to say in response to this consideration, as Complainant does, that the patent pools are convenient and allow a licensee to avoid infringement litigation in one fell swoop. The evidence cited by Complainant that purportedly shows that manufacturers do not know what technology they are licensing when they license the pool patents does not support Complainant's argument; if anything, the evidence of record shows that manufacturers know enough about the patents in the pools to realize that they are being forced to license technology that they do not want. *See* J. Chen Tr. 918:4-920:7.[65]

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[65] The relevant testimony of Jerry Chen is as follows:

> Q You had a copy of the license and the patent list before you entered into the license; is that right, sir?
>
> A In the -
>
> Q No, I'm just asking you, you had a copy of the license and the patent list before you entered into the license with Philips?
>
> A They give us, yes.
>
> Q And you didn't look at that patent list, did you?
>
> A Of course, yes. I just explained that. I will explain again. Before we signed the patent license, we have a patent list, because Philips offer us so-called standard joint license agreement to us, so of course, including the patent list. But in the patent list, there are over 100, over 100 patents. So -- and also,

there are a lot of irrelevant patents in the list, for example the CD-audio, CD-ROM and CD-I, and also the CD-MO patent in the list. Of course, we have a list, and also, we expressed such opinion to Philips Taipei. So I have a phone with Danny Lin. He's a manager of Philips Taipei who is in charge of patent licensing in Taiwan. I, on the phone, spoke with him regarding this issue, hose patents we don't need, why they need to put in the list. But we got the answer I just explained. We got the answer, even if you use one patent of the list or two or more, you still need to pay the same royalty rate, the same amount. So I have, before, we signed a joint license agreement.

Q Mr. Chen, I want to direct you to tab 2 of your binder, which is a copy of your deposition testimony, and direct your attention to page 158, line 13 . Page 158, line 13.

A Line 13.

Q You testified at your deposition "I have looked at the patent list, this is an attachment to the agreement, and there are so many numbers that I didn't look at them in detail, and I remember there were over 100. Do you remember that testimony?

A Yeah, that's my answer, right.

JUDGE HARRIS: Yes, he remembers that .

BY MS. AQUINO : So you didn't look at the patents in detail; correct?

A Yes. I also explained that we have a patent list, but we don't have the patent in very detail, but from the patent list, I remember in the deposition, I also explain to you, it's very easy to take a look in the list, there are different category for the patent. So at that time I explained to you they are CD audio, CD-ROM and CD-I and also the CD-MO in the patent list. So it's very obvious we don't need that, but in the detail, we don't have time, we don't have the manpower to go into the detail, and also, that's over 100 patents.

Dr. Rubenstein's definition of "essential as a practical matter" that includes patents in the pools if a substantial portion of the market practices the patent is unreasonably anticompetitive. The better, and procompetitive, definition of "essential as a practical matter" is Dr. McLaughlin's, which includes in the pools "only complementary patents for which there are no substitutes."

3. The Presence of Non-essential Patents in the Pools

Having the foregoing definition of "essentiality" in mind, we now turn to an analysis of the so-called "essential " patents in the pools that Respondents and the Staff contend are actually non-essential. Respondents and the Staff maintain that the patent pools violate the "rule of reason" because Dr. Rubenstein's faulty analysis of essentiality has allowed non-essential patents into the pools. *See* RPHB at 12-16; SPHB at 23-27. Alternative technologies that compete with these patents, Respondents and the Staff maintain, are unreasonably foreclosed from use by licensee manufacturers because they are wedded to the nonessential patents that they are compelled by the pools to accept.

Among the patents in the Philips CD-R and CD-RW pools that have been identified by the Staff as non-essential are Sony's U.S. Patent No. 4,942,565 (the "Lagadec '565 patent") and Philips' U.S. Patent No. 5,001,692 (the "Farla '692 patent"). *See* SPHB at 23. Neither of these patents have been asserted by Complainant as having been infringed by

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J. Chen Tr. 918:4-920:7.

Respondents. Respondents, in addition to identifying the Farla '692 patent as non-essential, contend that Philips' U.S. Patent Nos. 4,962,493 and 4,807,209 (the "Kramer '493 and '209 patents") in the pools are non-essential.[66] The Kramer patents have been asserted by Complainant as being infringed by Respondents. Respondents also identify as non-essential the following patents in the pools, which Complainant has not asserted as being infringed by Respondents: (i) Sony's U.S. Patent No. Re. 34,719 (the "Yamamoto '719 patent"); (ii) Ricoh's U.S. Patent No. 5,740,149 (the "Iwasaki '149 patent"); (iii) Sony's U.S. Patent No. 5,126,994 (the "Ogawa '994 patent"); (iv) Philips' U.S. Patent No. 5,978,351 (the "Spruit '351 patent"); (v) Philips' U.S. Patent No. 5,060,219 (the "Lockhoff '219 patent"); (vi) Philips' U.S. Patent No. 5,835,462 (the "Mimnagh '462 patent"); and (vii) Taiyo Yuden's U.S. Patent Nos. 4,990,388 and 5,090,009 (the "Hamada '388 and '009 patents"). *See* RPHB at 12 and 15-16.

a. The Sony Lagadec '565 Patent

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[66] Respondents somewhat inconsistently state in a portion of their initial post-hearing brief that each of the asserted patents, if found valid and infringed, are "essential " to the practice of the Orange Book. *See* RPHB at 10 (The Princo Respondents contend that their discs do not infringe the asserted patents and that the asserted patents are invalid. If the ALJ finds otherwise, however, the Princo Respondents contend that the asserted patents are essential and that Philips is misusing them by coercing licensees to accept non-essential patents."). Inconsistently, however, in another part of their initial post-hearing brief, Respondents contend that the asserted Kramer '493 and '209 patents are non-essential. *See* RPHB at 15-16. It is assumed for purposes of this Initial Determination that Respondents intend to argue that these patents, although characterized erroneously by Complainant as essential, are really non-essential. *See* RPHRB at 10. Accordingly, notwithstanding the inconsistency in Respondents ' brief, this argument will be addressed as such in this Initial Determination.

In April of 2001, Sony submitted the Lagadec '565 patent - the same patent asserted by the Princo Respondents in support of their invalidity arguments as to the '856 and '825 patents - to Dr. Rubenstein for the purpose of including it in the Philips CD-R patent pool as essential for the practice of the CD-R standard. RX-1800. Dr. Rubenstein agreed with Sony that Lagadec was "technically" essential, meaning that in his view, at least one of its claims covered at least a portion of the Orange Book standards. *See* CX-563C (July 3, 2001 Rubenstein Status Report on the Study of Sony's Patent Submissions for CD-R at PH06575 1). Dr. Rubenstein found that in Lagadec, "[a]t least claim 6 is essential for a disc with a substrate, a recording layer, and a protective layer, where the substrate has a substantially spiral wobbled pregroove formed thereon by a control signal consisting of a carrier frequency (22 .05 kHz) modulated by an ATIP signal,[67] which he found consistent with certain sections of the Orange Book. *See Id.* at PH065753.[68] As a consequence, the Lagadec '565 patent was then added to the CD-R "essential" patent list and remains on the most current list. *See, e.g.*, RX-695 at PH 086957; RX-41 at PH 108046.

Prior to Sony's submission of that patent to Dr. Rubenstein, the Lagadec '565 patent had never been on the

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[67] "ATIP" stands for "Absolute Time In Pre-groove," standing for the methodology for inputting time-code information in the CD-R groove. *See* RX-407C (Orange Book CD-R Standard § 1 .4 .1 at PHO 15685 (definition of "ATIP")).

[68] Since the patent was technically essential in his view, Rubenstein expressly chose not to reach the issue of whether Lagadec was also essential "as a practical matter." CX-563C (July 3, 2001 Rubenstein Status Report on the Study of Sony's Patent Submissions for CD-R at PH065752).

list of essential CD-R patents. *See, e.g.*, RX-755 (Exhibit B4). According to the testimony of Hans Mons, a Philips engineer who worked with Philips and Sony technicians on the cooperative efforts of both companies to develop CD-R technology, the Lagadec digital method for storing time code information proposed by Sony during that phase of the project was rejected by both Philips and Sony in favor of Philips's frequency-modulated ATIP method. See Mons Tr. 394:19-409:2. "I think that was in the next meeting that Sony decided to accept the ATIP proposal," Mons testified, "because in the next meeting, they had evaluated our ATIP proposal and the discs. They had written information on it, and what they told us, that it was simple and it worked well, and they silently withdr[e]w their own proposals." Mons Tr. 408:33-409:2.

Later during Complainant's rebuttal phase of the trial, Dr. Hesselink testified against Respondents' position that the Lagadec '565 patent anticipates the '825 patent at issue. Dr. Hesselink opined that Lagadec would not work with a CD-R system: "As a result, Philips and Sony dismissed the Lagadec approach because this is a very difficult problem to solve and Lagadec just did not provide a scheme that would work and was reliable and could be used for a variety of different purposes as is required under these patents." Hesselink Tr. 2585:1-5 .

According to the Staff, the Lagadec '565 patent demonstrates not only that a nonessential patent remains on the CD-R list of "essential" patents, but also "raises serious questions about the good faith of Sony and Philips in placing the patent on the list." SPHB at 24.[69] According to Mons,

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[69] In response to the Staff's findings of fact on this issue, Complainant contends that there is nothing inconsistent about Professor Hesselink's opinion that Lagadec does not anticipate the '825 patent and Dr.

Philips and Sony jointly addressed during the CD-R development phase the issue of having the "absolute time" encoded into the pregroove of a disc. Mons Tr. 385:10-386:24. The two companies came up with two different ways to solve this problem. Philips came up with the ATIP method of analog modulation of the frequency of the "wobble" signal of the pregroove, whereas Sony came up with two alternative methods, one of which was a digital modulation of the wobble signal. Mons Tr. 399:21-401:2, 401:6-403:13. The digital modulation alternative ultimately formed the basis of Sony's Lagadec '565 patent. *See* Hesselink Tr. 2585:1-13.

In arguing that the Lagadec '565 patent did not anticipate the '825 patent at issue, Dr. Hesselink testified at trial that the digital modulation methodology of Lagadec differs substantially from the analog modulation technology of the '825 patent:

> So if you look at this signal, this is a digital approach. And in fact, it turns out that Lagadec discloses in its patent that he doesn't want to use an analog approach because there are some problems with the analog approach in his opinion. And so he opts for a digital approach....
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> ***
>
> Furthermore, there is a real difficulty with actually analyzing this information in a player or reading it out and trying to decode it, because there's only one

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Rubenstein's conclusion that some portion of the Orange Book standard meets all of the limitations of at least one claim of Lagadec, making Lagadec an essential patent to practice of the Orange Book. *See* Complainant's Response to Staffs Proposed Findings of Fact and Conclusions of Law at 13

> area in this code where you have to make sure that you understand that this transition is now twice as long. And so the measurement of this is prone to errors, and it is very difficult to carry out a decoding of this particular approach.
>
> ***
>
> Lagadec has a broad spectrum. Rijnsburger has a broad spectrum. They do not look like frequency-modulated signals. They don't act like frequency-modulated signals and they don't produce the results of a frequency-modulated signal. As a result, Philips and Sony dismissed the Lagadec approach because this is a very difficult problem to solve and Lagadec just did not provide a scheme that would work and was reliable and could be used for a variety of different purposes as is required under these patents .

Hesselink Tr. 2580:16-21, 2581:7-14, 2584:25-2585:5.

It is clear from an examination of the sections of the Orange Book that Dr. Rubenstein cited in concluding that Lagadec was "technically essential" that the Orange Book relies upon Philips' ATIP technology, not Lagadec's digital technology. *See* CX-563C (July 3, 2001 Rubenstein Status Report on the Study of Sony's Patent Submissions for CD-R at PH065753); RX-407C (Orange Book CD-R Standard § IV). Inasmuch as there is no evidence in the record to show that the claims of Lagadec are any broader than what the patent discloses or that those claims somehow cover the ATIP technology of the Orange Book as well as the digital methodology that Lagadec discloses,[70] it follows that Dr .

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[70] As shown above, the Hesselink testimony offered by Complainant is not just that the Lagadec '565 patent disclosure is too narrow to anticipate the '825 patent; it is that the Lagadec '565 patent constitutes *completely*

Rubenstein's characterization of Lagadec as "technically essential" was in error. Lagadec constitutes, at best, a substitute technology for the ATIP standard, and at worst, an extraneous, non-working add-on to the patent pool . Either way, Lagadec is "technically non-essential" to the patent pool and has not been shown to be "essential as a practical matter." Accordingly, it represents alternative technology and its inclusion in the pool unreasonably forecloses competition.

b. The Philips Farla '692 Patent

Both Respondents and the Staff contend, without contravention by Complainant, that the Philips Farla '692 patent is non-essential and should not be included in the Philips CD-R and CD-RW patent pools. *See* RPHB at 13-15; SPHB at 24-27. The claims of the Farla '692 patent are directed to a particular method of carrying out a strategy for writing data, otherwise known as a "write strategy," onto a blank recordable disc. In particular, the patent relates to whether additional write pulses or additional information relating to the write pulses is necessary for the write strategy. McLaughlin Tr. 1525:18-1526:6; RX-1472. The methodology and claims of the patent are directed to optimizing the writing accuracy of an optical recorder when faced with the properties of a particular disc. *See* RX- 1472 ('692 patent, col. 1:67-2:3).

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different technology that does not work well according to the Orange Book standards. This testimony renders Lagadec extraneous to the Orange Book, and necessitates a finding that it is non-essential to the pool. Its inclusion in the pool appears to be an attempt to forestall digital approaches to achieving what the Philips analog technology has achieved.

On May 21, 2001, Dr. Rubenstein sent Philips a status report in which he stated that the Orange Book CD-R standard did not appear to require the Farla '692 patent and therefore was not "technically essential." RX-1792 (May 21, 2001 Rubenstein Status Report re Study of Philips' Patent Submissions re CD-R at RK005216). Dr. Rubenstein analyzed the following passage from independent claim 1 of the patent, which is similar to the language of independent claims 10 and 13:

> ... a record carrier having optically readable adjustment information signifying whether a sequence of write pulses for recording a bit sequence ....
>
> said adjustment information signifying the number and relative positions of said additional pulses in a write pulse sequence....

Id.; *also see* RX-1472 ('692 patent, col. 16:27-33).

According to Dr. Rubenstein's status report, the "adjustment information" limitation of the claim could be viewed as the "special information" encoded in the ATIP frames of the Lead-in Area" of an Orange Book compliant CD-R disc, but "this 'special information' does not appear to provide information about having additional write pulses (*i.e.*, increasing the number of write pulses)." *Id.*, *citing* RX-407C (Orange Book CD-R Standard § IV.4). Dr. Rubenstein also pointed out that the "Optimum Power Control" ("OPC") procedure described in the Orange Book "did not appear to require writing additional pulses" or "varying the number or relative positions of additional write pulses in accordance with 'adjustment information'" as claimed in the '692 patent. *Id.*, *citing* RX-407C (Orange Book CD-R Standard Attachment B3). Dr. Rubenstein noted, however, that his group did not know if the Farla '692 patent was nevertheless

"essential as a practical matter,"[71] and invited Philips to comment further on that possibility. *Id.* at RK005217.

On May 16, 2002, Dr. Rubenstein again wrote Philips in reference to the essentiality of the Farla '692 patent to the Orange Book CD-RW standard. *See* RX-1781C (May 16, 2002 Rubenstein Status Report on CD-R & CD-RW Patent Evaluation for CD-R & CD-RW Patent Licensing Programs at RK007930-31). Dr. Rubenstein's findings for CD-RW matched his earlier findings for the CD-R standard that the patent was not "technically essential." *Id.* Again, he requested information from Philips as to whether the Farla '692 patent was nevertheless "essential as a practical matter" for the CD-RW standard. *Id.*

Dr. Rubenstein's conclusions were echoed at trial by the testimony of Respondents' expert, Dr. McLaughlin, who opined that the Farla '692 patent is not necessary to practice the CD-RW portion of the Orange Book. *See* McLaughlin Tr. 1525:14-1528:8. Moreover, although Dr. Rubenstein had not opined on whether the Farla '692 patent is essential "as a practical matter" to the CD-R and CD-RW standards, Dr. McLaughlin testified that at least one economically viable alternative for performing write strategy exists that does not infringe the Farla patent. McLaughlin Tr. 1563:1-12. Dr. McLaughlin identified an OPC and write strategy method available from Calimetrics, Inc., where he is employed as a

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[71] In his status report, Dr . Rubenstein defined a patent that is "essential as a practical matter" as one having "at least one claim which is found to have no realistic alternative for implementing the CD-R standard (or a portion thereof . However, for a patent to be found essential on this basis, evidence must be submitted that demonstrates such essentiality." RX-1792C (May 21, 2001 Status Report at RK005214). The evidence, according to the status report definition, could include, *inter alia*, "technical/commercial reason(s) why the invention claimed in the patent is the only practical way to implement part of the CD-R Standard...." *Id.*

Principal Scientist, as an alternative that is not covered by the Farla '692 patent and that would comply with the requirements of the Orange Book if it were used. McLaughlin Tr. 1493:3-8; 1520:16-22, 1521:12-1522:13, 1527:7-1528:8.

According to Dr. McLaughlin, the Calimetrics OPC and write strategy method uses a write strategy matrix McLaughlin Tr. 1519:12-22. It examines information that has been written to a recordable disc and information to be written to the disc, and uses the write strategy matrix to define the strategy for writing data onto the disc by appropriately setting the power of the write laser. *Id.* It has been applied to CD-R and CD-RW discs, and has been shown to operate and to be effective in Orange Book-compliant discs. McLaughlin Tr. 1564:17-23. Further, McLaughlin opined, and Complainant neither concurs nor contests, that the Calimetrics OPC and write strategy method is not covered by the Farla '692 patent. McLaughlin Tr. 1527:7-1528:8. In particular, the Calimetrics method does not use or examine information from a disc to make a determination if additional write pulses are necessary to record a particular sequence of information onto the disc. *Id.*

The foregoing evidence conclusively demonstrates that the Farla '692 patent is not "technically essential" and has not been shown to be "essential as a practical matter" as properly defined, and therefore should not be included as such in the Philips CD-R and CD-RW patent pools. The patent was included in the CD-R license agreement for many years before it was removed from the list of essential patents in 2001. *Compare* RX-840; RX-778; RX-755; RX-914. However, at least as of a license agreement signed in January 2002, the Farla '692 patent was still being listed as an essential patent under the CD-RW license agreement. *See* RX-770 at PH087634.

It is unclear whether the Farla '692 patent remains listed on Philips' standard license agreements as an essential patent in the CD-RW pool. Philips' website of form license agreements does not include the lists of essential and non-essential patents for the CD-RW disc pool. *See* "Philips Intellectual Property and Standards, CD-R/RW Patents," *at* http://www.licensing.philips.com/licensees/patent/ob/ (CD-R/RW hyperlink) (last visited on August 26, 2003). In the absence of evidence to the contrary, it can only be assumed that the Farla '692 patent continues to be listed as an essential patent on the form CD-RW license as well as on the agreements of all existing CD-RW licenses. As such, it unreasonably forecloses competition from alternative technologies that also comply with the Orange Book.

c. The Ricoh Iwasaki ' 149 Patent

Respondents contend, without contest by Complainant, that the Ricoh Iwasaki '149 patent is non-essential and should not be included as such in the Philips CD-R and CD-RW patent pools. RPHB at 13-15. The claims of the Iwasaki '149 patent are directed to a particular method of performing the OPC procedure, which is setting laser power to an appropriate level to record onto a particular disc. McLaughlin Tr. 1516:24-1518:7; RX-52 (Iwasaki '149 patent). The OPC method defined by the Iwasaki patent consists of calculating a standardized gradation factor by monitoring the amplitudes of signals from test data patterns. McLaughlin Tr. 1520:23-1421:11; RX-52 (Iwasaki '149 Patent).

Respondents assert that the Iwasaki '149 patent is not essential to practice the Orange Book for at least two reasons. First, the Orange Book does not mandate a particular method for carrying out the OPC function.

McLaughlin Tr. 1507:10-1509:17; RX-407C (Orange Book CD-R Standard at PH015759); RX-408C (Orange Book CD-RW Standard at PH023331-023332). Philips's employee and technical witness, Hans Mons, testified that some of the characteristics the Orange Book defines for CD-Rs and CD-RWs are not mandatory, and that Orange Book-compliant CD-Rs and CD-RWs do not need to conform to the non-mandatory characteristics defined by the Orange Book. Mons Tr. 453:18-454:2; McLaughlin Tr. 1504:10-18.

Second, as stated earlier in connection with the Farla '692 patent, the Iwasaki 1149 patent is not essential as a practical matter because at least one economically viable alternative for performing OPC exists that does not infringe the Iwasaki '149 patent. McLaughlin Tr. 1563:1-12. The OPC and write strategy method available from Calimetrics, Inc. was identified by Dr. McLaughlin as an alternative that is not covered by the Iwasaki patent and would comply with the requirements of the Orange Book if it were used. McLaughlin Tr. 1521:12-1522:13; 1523:5-13.

Finally, Respondents contend that the Calimetrics method is not covered by the Iwasaki '149 patent. McLaughlin Tr. 1521:12-18. The Iwasaki patent requires the calculation of a certain mathematical quantity, and the calculation of that mathematical quantity does not occur during the Calimetrics OPC procedure. McLaughlin Tr. 1521:19-1522:13.

Dr. Rubenstein has not rendered any opinion as to the essentiality of the Iwasaki '149 patent. Rubenstein Tr. 2263:11-2264:12. Neither has Complainant offered any expert testimony to counter the evidence presented by Dr . McLaughlin on the patent's non-essentiality. Thus, the evidence of record demonstrates that the Iwasaki '149 patent is non-essential to the practice of the Orange Book, and its

inclusion among the list of "essential" patents in the pools unreasonably forecloses competition.

d. The Sony Yamamoto 1719 Patent

Respondents also contend, and Complainant does not contest, that the Sony Yamamoto '719 patent is non-essential and should not be included as such in the Philips CD-R and CD-RW patent pools. RPHB at 15. The claims of the Yamamoto patent contain functional limitations for creating a master disc. McLaughlin Tr. 1534:14-25; RX-50. The limitations define a method of using a single laser beam to create a master containing both a wobbled pre-groove and pre-recorded data. *Id.*

Respondents assert, without contest from Complainant, that the Yamamoto patent is not essential to practice the Orange Book for at least two reasons. First, the Orange Book does not require or specify a particular mastering technique. McLaughlin Tr. 1535:1-6. Thus, the Yamamoto mastering method is not "technically essential" because it is not inevitably infringed by Orange Book compliant discs. *Id.* Second, the Yamamoto patent is not essential as a practical matter. At least one economically viable alternative for creating a master exists that does not infringe the Yamamoto patent. McLaughlin Tr. 1535:7-15. According to Dr. McLaughlin, the Calimetrics two-beam mastering method is a commercially viable alternative to the patent. McLaughlin Tr. 1568:3-15, 1570:1-9. The two-beam mastering system allows a groove and pits to be simultaneously formed in a master disc. McLaughlin Tr.1535:7-1536 13. The two-beam alternative is not covered by the Yamamoto patent because it does not use one recording beam modulated at two different frequencies to create marks and a track. McLaughlin Tr. 1535 16-1536:13.

Dr. Rubenstein has not rendered any opinion as to the essentiality of the Yamamoto '719 patent. Rubenstein Tr. 2262:14-2263:10. Neither has Complainant offered any expert testimony to counter the evidence presented by Dr . McLaughlin on the patent's non-essentiality. Thus, the Yamamoto '719 patent fails to meet the criteria for essentiality and, as such, unreasonably forecloses competition by appearing on the "essential" list of patents in the pools.

e. The Philips Kramer'493 and '209 Patents

As noted earlier, the Kramer '493 and '209 patents are the only patents listed as "essential" by the pools and alleged by Respondents to actually be "non-essential" that have been asserted by Complainant against Respondents as being infringed by Respondents' CD-R/RW discs. As already found earlier in this Initial Determination, the asserted claims of these patents are indeed infringed by Respondents' products. *See* p. 50.

With regard to the essentiality of the Kramer '209 and '493 patents, Dr. Rubenstein has determined that they are "technically essential" patents to the CD-R disc standard, but as of February 2002 had not yet reached an opinion on their essentiality to the CD-RW disc standard. *See* Rubenstein Tr. 2299 :20-23 ; RX-87C (October 17, 2001 Rubenstein Status Report at PH065770); RX-1798C (February 25, 2002 Rubenstein Status Report at RK000239, RK000242). Dr. McLaughlin found the opposite way from Dr. Rubenstein, that these patents were technically non-essential on the ground that both patents are directed to recordable discs with diffractive follow-on tracks that cover single-beam tracking methods under Respondents' claim interpretation. McLaughlin Tr. 1536:14-25, 1537:9-17; RX-58; CX-13.

Since the Orange Book indicates that single-beam or three-beam systems can be used within the standard, McLaughlin opines, there are thus alternative tracking methods that are recognized by the Orange Book but not covered by the Kramer patents that are foreclosed from competition with the Kramer method by the inclusion of those patents in the pools, thus rendering them "non-essential." McLaughlin Tr. 1537:9-17; RX-407C (Orange Book CD-R Standard at PH015776).

It has been concluded in the infringement section of this Initial Determination, that Respondents' claim construction for the asserted claims of the Kramer '493 and 1209 patents is erroneous. *See* p. 44, 46, 48. Rather, it has been determined herein that those claims cover both single-beam *and* three-beam methods. *See* p. 44. These claims are broad enough to encompass two of the three tracking methods that have been identified in the Orange Book as alternatives to one another, but there is no evidence in the record as to whether it covers the third alternative, known as the "Differential Phase Detection" or "DPD" method. *See* RX-407C (Orange Book CD-R Standard Attachment B 13 at PH 015776). There is also no evidence in the record as to whether this method is covered by any other patent in the pool.

In the absence of such evidence, this unpatented alternative technology that complies with the Orange Book precludes a finding that the Kramer patents are "technically essential" to practicing the Orange Book, even if they are infringed. Accordingly, their inclusion in the pools as "technically essential " is erroneous and anticompetitive.

f. The Taiyo Yuden Hamada '388 and '009 Patents

With respect to Taiyo Yuden's Hamada '388 and '009 patents, Dr. Rubenstein found that they were not technically essential to the Orange Book, but also found on the basis of tests conducted by his own independent expert, ETA-Optik, and by Taiyo Yuden that virtually all of the CD-R discs in the U.S. market practiced those patents. He therefore concluded that the Hamada patents were "essential as a practical matter," and included them in the CD-R disc pool as well. Rubenstein Tr. 2264:21-2280:6; RX-1777C (June 21, 2001 Rubenstein Status Report to Taiyo Yuden at RK008207); RX-1759C (October 16, 2001 Rubenstein Status Report to Taiyo Yuden at RK008151- 53). Dr. McLaughlin disagreed with Dr. Rubenstein's analysis, finding that the Hamada patents relate to disc layer structure and have commercially viable substitutes that are not covered by the patents. McLaughlin Tr. 1539:9-22, 1540:18-1545:1.

Dr. Rubenstein's conclusion that the Hamada '388 and '009 patents are "commercially essential" even though they are not "technically essential" is unconvincing. The evidence shows that, of the CD-R brands of 27 different manufacturers that Dr. Rubenstein and his colleagues collected for testing purposes, 26 satisfied the tests for coverage by the patents that ETA-Optik performed and all 27 satisfied the tests for coverage that Taiyo Yuden performed. See Rubenstein Tr. 2264:21-2280:6; RX-1759C (October 16, 2001 Rubenstein Status Report to Taiyo Yuden at RK008151-53) . To reach this result, however, Dr. Rubenstein had to construe the '009 patent in a particular way so that the test results would result in a finding of "commercial essentiality."

Specifically, the relevant claim of the Hamada '009 patent requires an optical parameter to fall within a specific range, and that parameter is dependent upon a variable

determined by measuring the thickness of the recording layer of a CD-R disc. *See* RX-1759C at RK008152. This measurement is shown in the patent to be essentially equal throughout the recording layer of a CD-R disc, but this disclosure does not account for CD-R discs that have a pregroove even though the patent acknowledges the use of pregrooves on optical discs. See *Id.* Dr. Rubenstein avoided this problem by deciding that it was appropriate to measure the thickness of the recording layer of such discs only in the pregroove "in view of the recording of information only in the pregroove" on the disc. *Id.* Measuring thickness in this way yielded a higher result than if the thickness of the "land" on the disc had also been accounted for, since the thickness of the recording layer in the groove is thicker than it is in the "land." *Id.*

Using this value, ETA-Optik was able to report to Dr. Rubenstein that 25 of the 26 brands that it tested met the claim limitation of the '009 patent. *Id.* However, one brand, the Verbatim CD-R disc manufactured by Mitsubishi, did not. *Id.* Dr. Rubenstein dismissed this difference on the ground that the Verbatim disc was "an old type of CD-R disc," that "newer discs do not use such thick dye," that "Mitsubishi's market share is only around 1 .7-1 .8%," and that "a Yamaha disc also manufactured by Mitsubishi but bearing a different ATIP code did meet the requirement ...." *Id.* Dr. Rubenstein also found that an alternative thickness measurement devised by Taiyo Yuden, consisting of a weighted average of the thickness of the recording layer in the groove and the "land," resulted in optical parameter values that fell within the claimed range for all 26 discs that were tested. RX-1759C at RK008152-53. He therefore concluded that both Hamada patents were "essential as a practical matter." *Id.*

That Dr. Rubenstein construed the '009 patent so liberally in order to achieve the result that pool member Taiyo Yuden wanted underscores the danger that the DOJ warned about in its business review letters when it examined the "essentiality as a practical matter" criterion. This criterion, as the DOJ cautioned, is "inherently more susceptible to subjective interpretation." *See* CX-357 (3C DVD Letter at 10). Dr. Rubenstein's analysis, moreover, belies not only his own self-description as a "neutral evaluator" of patents for inclusion in the pool, but also the DOJ's even more stringent requirement that he act as an "independent arbiter." *See* CX-355 (MPEG-2 Business Review Letter at 5). Moreover, in view of Dr. McLaughlin's unchallenged testimony of the existence of several alternative technologies to both Hamada patents, including alternatives that were developed by Mitsui Toatsu, Bayer AG, and Philips itself, and also including the Mitsubishi Verbatim disc that was actually found by Dr. Rubenstein to exist in the market and to be licensed by Philips (McLaughlin Tr. 1540:18-1545:1), Dr. Rubenstein's addition of the Hamada patents in the pools invariably leads to "the inclusion of patent rights for which there were viable substitutes," thereby "incurring] competition by foreclosing such substitutes." *See* CX-357 (3C DVD Letter at 10). Accordingly, the Hamada ' 388 and '009 patents should not have been included in the pools because by doing so competition is unreasonably foreclosed.

g. Other Non-essential Pool Patents Erroneously Classified as "Essential"

Finally, Respondents contend that several other patents in the pools that have been identified by Dr. Rubenstein as "essential" are really non-essential. RPHB at 15-16. They are the Sony Ogawa '994 patent, and the Philips Spruit '351, Lockhoff '219, and Mimnagh '462 patents.

Dr. Rubenstein found that the Ogawa '994 patent was technically essential to the Orange Book and therefore included that patent in the CD-R disc pool. Rubenstein Tr. 2291:19-229216; RX-87C (October 17, 2001 Rubenstein Status Report at PH065774). The Spruit '351, Lockhoff '219, and Mimnagh '462 patents were also found by Dr. Rubenstein to be technically essential to both the CD-R and CD-RW disc standards and were included in those pools. Rubenstein Tr. 2292:17-25; RX-126C (May 14, 2002 Rubenstein Status Report at PH065718, PH065719 and PH065726).

According to Dr. McLaughlin, the Ogawa, Spruit, Lockhoff, and Mimnagh patents are not essential to comply with the Orange Book CD-R and CD-RW specifications. McLaughlin Tr. 1500:16-1501:16; RX-45 (Ogawa); RX-48 (Lockhoff); RX-49 (Mimnagh); RX-53 (Spruit). The Ogawa and Spruit patents relate to OPC and write strategy methods. McLaughlin Tr. 1517:21-1518:7, 1522:14-1523:4. Thus, Dr. McLaughlin opined, like the Farla and Iwasaki patents, these patents are not essential to practice the Orange Book for at least two reasons. First, the Orange Book does not mandate a particular method for carrying out OPC and write strategy functions. McLaughlin Tr. 1518:8-15, 1523:5-16,1524:1-7. Thus, according to Dr. McLaughlin, the Ogawa and Spruit write strategy and OPC methods are not technically essential. McLaughlin Tr. 1518:8-15, 1523:5-16, 1524:1-7. Second, according to Dr. McLaughlin, the patents cannot be essential as a practical matter because the Calimetrics OPC and write strategy method – an economically viable alternative for performing write strategy that does not infringe the patents - exists. McLaughlin Tr. 1518:16-1519:1, 1519:23-1520:15, 1521:12-1522:13, 1523:5-13, 1524:8-1525:13.

Dr. McLaughlin further testified that the Lockhoff patent relates to a copy control method (McLaughlin Tr. 1528:11-19; RX-48) and the Mimnagh patent relates to a recording velocity control system (McLaughlin Tr. 1532:10-17). Dr. McLaughlin identified alternatives to the Lockhoff patent that are not covered by it . McLaughlin Tr. 1529:14-1531:21. Furthermore, Dr. McLaughlin testified, the subject matter defined by the Lockhoff and Mimnagh patents is not essential to carry out one of the purposes of the Orange Book; namely, interchangeability. McLaughlin Tr. 1528:23-1530:3, 1532:18-25, 1533:15-23. Thus, he found, the Lockhoff, Mimnagh and Kramer patents are not essential to comply with the Orange Book.

Even though Dr. Rubenstein concluded that the foregoing patents were "technically essential" because they covered Orange Book technology, Dr. McLaughlin's testimony convincingly shows that Orange Book-compliant alternatives exist that have not been shown to be covered by any patent in the Philips CD-R or CD-RW pools. Accordingly, these patents have erroneously been included in the pool as "essential" when they are in fact "non-essential," and that error is anticompetitive in effect .

4. Unreasonableness of the Royalty Rate

The reasons given earlier herein as to why the royalty rate mechanism of the pools is anticompetitive, and therefore illegal *per se*, apply equally to finding that mechanism anticompetitive under the "rule of reason ." See pp. 175-182. However, more is required under the rule of reason; there must also be a balancing of whether its anticompetitive effects outweigh its procompetitive effects, and a determination of "*actual* adverse effect on competition as a whole in the relevant market." *Columbia Broadcasting*

System, Inc. v. American Soc. of Composers, Authors and Publishers, supra, 620 F.2d at 934.

Here, Complainant raises two procompetitive aspects of their royalty rate strategy. First, Complainant points out that in the 10 years since Philips has licensed its patent pools, sales of CD-R and CD-RW discs have become so successful that they are now a mature, price-sensitive market of consumer commodities. McCarthy Tr. 195 :25 -1956:16:, 1992:2-25; Beune Tr. 2384:2-2385:22. Complainant further asserts that numerous manufacturers, distributors and retailers compete vigorously for sales, and manufacturing capacity has greatly expanded to meet and exceed increased demand. RX-1379C; CX-618C (pp. 8-9). In the late 1990s, prices of CD-R and CD-RW products have declined. J. Chen Tr. 888:7-9, 896:5-18. From 1997 to 2002, Complainant further points out, worldwide demand for CD-R discs increased from a few hundred thousand to more than 5 billion, supply increased from several hundred thousand to almost 8 billion, prices to consumers for CD-R and CD-RW discs decreased by more than 50% from 1999 to 2001, supply capacity increased from approximately 6 billion discs in 2000 to more than 10 billion discs in 2002, the number of CD-R manufacturers increased by nearly 50% from 1997 to 2002, CD-R and CD-RW drive sales that were negligible in 1996 increased to almost 60 million units in 2002, and the price of CD-R/RW drives decreased from $700 to approximately $100 over that period of time. *See* CX-619C at p. 3, 6, 8, 9, 17 and 18.

Second, Complainant asserts that a procompetitive benefit of a specified standard royalty rate is that it allows manufacturers which respect others' intellectual property rights to plan their intellectual property costs for the term of the license with the knowledge that such costs will not be increased even if additional essential or "blocking" patents of

the licensors are identified and licensed . Beune, Tr. 2337:5-2340:19.

The standardization of components in the computer technology industry is nothing new. The Orange Book is very much like the Joint Electronic Devices Engineering Council ("JEDEC") standards that computer hardware manufacturers follow in order to make readily interchangeable products. *See, e.g., Winbond Electronics Corp. v. International Trade Com'n,* 262 F.3d 1363, 1367 (Fed. Cir. 2001) (JEDEC, charged with setting industry standards, evaluates requester's patented technology for adoption as industry standard with understanding that requester will grant royalty free licenses (*i.e.,* licenses for a one-time fee) to any manufacturer and to place the subject matter of the patent in the public domain if JEDEC accepts technology as a standard); *Micron Technology, Inc. v. Rambus Inc.,* 189 F.Supp.2d 201, 202-03 (D. Del.2002) (JEDEC requires its members to disclose their patents and patent applications to the organization to prevent unknowing standardization of a patented technology). Like the JEDEC standards, the Orange Book has aided the CD-R/RW industry in converting the innovation and development of CD-R/RW discs into a readily interchangeable commodity that is far more efficient to manufacture in vast quantities and at low cost than when the product was novel. As a result of this standardization, prices for CD-R/RW discs have fallen dramatically, as is typical with such technology. *See* Smith Tr. 1486:19-25.

As has already been discussed, the procompetitive effects of pools that license technically essential patents are well-recognized, including "integrating complementary technologies, reducing transaction costs, clearing blocking positions, and avoiding costly infringement litigation." CX-355 (MPEG-2 Business Review Letter at 11). However,

patent pools that encompass non-essential patents pose inherent competitive problems.

As already explained, patent pools such as the one maintained by Philips and its licensor-partners have a tendency to gobble up innovative patented technologies in the relevant product market that prove to be popular among manufacturers. The most dramatic example of this effect is the evidence in the record of the enormous drop in royalty rates that certain pool members charged to Taiwanese manufacturers of CD-R/RW discs after the Taiwan Fair Trade Commission declared the Philips CD-R patent pool to be illegal in Taiwan and ordered the pool licensors to license their patents on an individual basis. *See* p. 144-45. Rather than pay the 10-yen royalty rate that the pool had demanded, Sony and Taiyo Yuden dropped their royalties substantially after the ruling. *See Id.* This experience demonstrates that when illegal patent pools collapse, royalty rates collapse.

What is particularly anticompetitive about the fixed royalty rates set by Philips and its licensor-partners in the case of this patent pool is that the royalty amount, in and of itself, is necessarily arbitrary. There is no economically-driven rhyme or reason for the fixed amounts that Philips has picked for its "minimum" per-disc rates. They are set unilaterally by the pool members; they are not negotiated with licensees.

If the royalty rate were a no-minimum fee based on a reasonable percentage of sales that afforded licensees a decent profit margin, then the amount that Philips and its licensor-partners would earn for the patents in the pool would grow as CD-R/RW sales volume grows and shrink as volume shrinks. Manufacturers would not be driven out of the market by a cost squeeze caused by the pool's excessive minimum royalty. They truly would be able to plan their

intellectual property costs for the term of the license with the knowledge that such costs will not be increased, as Complainant now erroneously claims they can do now under the pool's current royalty rates. *See* Beune, Tr. 2337:5-2340:19. Prices could continue their declining trend and volume could continue to increase, benefiting consumers, manufacturers and licensors alike. Instead, by arbitrarily establishing an impracticable floor below which royalties cannot go unless a discriminatory arrangement of some kind is worked out with the pool's licensors, Philips and its licensor-partners in the pool have created an anticompetitive scenario.

The fact that Philips and its licensor-partners have broken their once-unified pool into separate lists of so-called "essential" patents that are offered at the pool royalty rate and so-called "non-essential" patents that are purportedly offered for "free" when the "essential" patents are also licensed, in various permutations of "Philips-only" patents or "Philips/Sony/Taiyo Yuden/Ricoh" patents, does not ameliorate the anticompetitive nature of the arbitrarily-set, fixed minimum royalty. As Respondents and the Staff have observed, manufacturers tend to license all of the pool patents that they can license, both essential and non-essential, in order to avoid all possibility of infringement litigation from Philips and its licensor-partners; they do not pick and choose some lists and not others. *See, e.g.*, J. Chen Tr. 918:4-920:7. Not only that, the makeup of each list of "essential" and "non-essential" patents, "Philips-only" patents, "Sony-only" patents and other combinations, is entirely within the control of Philips and its licensor partners. Each list must be taken by the licensee as a whole package; it cannot be divided up further by negotiation between the licensors and a licensee. This necessarily mixes essential and non-essential patents together, and in particular it draws non-essential patents into the list of essential patents when those

patents are erroneously included by a stretching of their scope to be included as "essential as a practical matter" or erroneously included as "technically essential," as Dr. Rubenstein has done.

Of the cases cited by Complainant to suggest that courts do not attempt to adjudicate reasonable royalty rates under the antitrust laws, one Supreme Court case actually suggests the opposite under the facts presented here. In the case of *Standard Oil Co. v. United States*, 283 U.S. 163, 172 (1931) ("*Standard Oil*"), cited by Complainant in its Post-hearing Brief at 41, certain patent pooling was countenanced and the Supreme Court specifically held that "[u]nless the industry is dominated, or interstate commerce directly restrained, the Sherman Act does not require cross-licensing patentees to license at a reasonable rate others engaged in interstate commerce." *Standard Oil, supra*, 283 U.S. at 172. But the Court sounded a warning that: "[i]f combining patent owners effectively dominate an industry, the power to fix and maintain royalties is *tantamount to the power to fix prices*." *Id.* at 174 (emphasis added). The Supreme Court's rationale was based upon the fact that "an agreement for cross-licensing and division of royalties violates the [Sherman] Act only when used to effect a monopoly, or to fix prices, or to impose otherwise an unreasonable restraint upon interstate commerce.' *Id.* at 175. The Court laid down the proposition that "[a]ny agreement between competitors may be illegal if part of a larger plan to control interstate markets [citations omitted]. Such contracts must be scrutinized to ascertain whether the restraints imposed are regulations reasonable under the circumstances, or whether their effect is to suppress or unduly restrict competition. [citations omitted].... And pooling arrangements may obviously result in restricting competition." *Id.* at 169.

Other cases from the Seventh Circuit cited by

Complainant along the same lines (CPHB at 41) are equally inapposite to the present investigation. In *USM Corp. v. SPS Technologies, Inc.*, 694 F.2d 505, 512-13 (7th Cir. 1982), *cert. denied*, 462 U.S. 1107 (1983), Judge Posner of the Seventh Circuit held that "no general principle of antitrust law forbids charging different prices to different customers, what is often but loosely called `price discrimination.'" *Id.*, 694 F.2d at 512. The court went on to note, however, that "[i]t might in a particular case be condemned as an attempt to monopolize or as an act of monopolization under section 2 of the Sherman Act, 15 U.S.C. § 2, or as a violation of the Rule of Reason under section 1 of that Act, but USM has made no effort to prove the elements of any of these offenses." *Id.* That lack of proof is not true here.

Here, a flat royalty fee for the pool is imposed arbitrarily by Philips and its licensor partners by means of a price-fixing scheme that takes in not only all "blocking" and "complementary" patents that are "technically" essential to practicing the Orange Book, but also related but non-essential innovation. Efforts on the part of pool members to have their patents included in the pool as "essential as a practical matter," even though those patents do not cover anything in the Orange Book, is merely an attempt to forestall competing technologies or to attain a royalty for the patent that is higher than the patent could garner from licensees by itself. It is, indeed, an unreasonably anticompetitive, concerted enterprise and a price-fixing scheme.

On balance, these anticompetitive effects of the royalty rate structure of the CD-R/RW patent pools far outweigh the procompetitive effects suggested by Complainant. As a consequence, the CD-R/RW patent pools fail to pass muster under the rule of reason.

5. Conclusion on Misuse Under the "Rule of Reason"

Taking all of the foregoing considerations into effect, the CD-R/RW patent pools of Philips and its licensor-partners constitutes patent misuse because they unreasonably restrain trade in the U.S. market for licensing patented CD-R/RW technology. It does so under the rule of reason just as surely as it constitutes a *per se* violation of the antitrust laws.

F. Purge of Patent Misuse

Finally, as pointed out earlier herein, patent misuse can be purged if the patentholder demonstrates a complete abandonment of the improper practices found to constitute misuse and that the consequences of the misuse have been fully dissipated. *In re Yarn Processing Patent Validity Litigation, supra.* No such showing has been made by Complainant here. Accordingly, the patent misuse found herein is ongoing.

G. Conclusion on Patent Misuse

For the foregoing reasons, the anticompetitive aspects of the patent pooling arrangements of Philips and its licensor-partners for CD-Rs and CD-RWs, of which the patents at issue in this investigation are a part, outweigh the procompetitive effects and have not been purged, rendering those patents unenforceable by reason of patent misuse. In the 10 years since Philips has licensed its patent pools, sales of CD-R and CD-RW discs have become a mature, price-sensitive market of consumer commodities. McCarthy Tr. 1955:25-1956:16, 1992:2-25; Beune Tr. 2384:2-2385:22.

IX. PATENT MISUSE

A. Background Facts

1. Philips and Sony, jointly developed CD-R and CD-RW technology in the early 1980s, as did others. Beune, Tr. 2334; L.Chen Tr. 980:2-9; RX-1379C at p. 79.

2. Philips' and Sony's joint development of CD-R and CD-RW technology was an outgrowth of their earlier joint development work on compact disc technology and the work of others. Mons, Tr. 371; L.Chen Tr. 980:2-9; RX-1379C at p. 79.

3. The development of recordable compact disc technology was initially spurred by the interest expressed to Philips in creating a user-recordable optical disc compatible with existing CD hardware. Mons, Tr. 365.

4. A key goal in developing recordable disc technology was to create compatibility rules that would ensure that the discs would be compatible with standard players and drives made by all manufacturers. Mons, Tr. 416.

5. Standards in CD and recordable CD technology ensure that a CD-R disc, whether prerecorded or

recordable, purchased anywhere in the world will work with any CD player anywhere else in the world. Van Dijk Dep. Tr. 147-48.

6. Standards in CD and recordable CD technology also ensure that CD-R discs manufactured by different manufacturers are capable of working in CD-recorders manufactured by different manufacturers Mons, Tr. 416.

7. After Philips and Sony introduced compact disc technology, companies interested in manufacturing compact discs sought to license Philips' and Sony's patents for compact disc technology of both companies. Beune, Tr. 2334-35.

8. Philips and Sony licensed CD-R and CD-RW disc technology in a joint license through a joint licensing program. Beune, Tr. 2334-2335.

1. The "Orange Book"

9. The patents at issue are among those in their patent pools that Complainant alleges are essential for manufacturers to implement the technical standards for manufacture of CD-Rs and CD-RWs as set out in two publications that are jointly issued by Philips and Sony Corporation ("Sony"). Complaint, ¶ 2.4.

10. One of these publications is entitled "Compact Disc Recordable System Description" (for CD-Rs) and the other is entitled "Compact Disc Rewriteable System Description" (for CD-RWs). RX-407C; RX-408C.

11. The "Orange Book" is the common name given to the CD-R (Part II) and CD-RW (Part III) system specifications. CX-162C (p. 1-2); CX-163C (p. 1-2).

12. The versions of these sections of the Orange Book that were introduced into evidence are "Part II: CD-R Version 3.1," dated December 1998 (RX-407C), and "Part III: CD-RW Version 2 .0," dated August 1998 (RX-408C) .

13. Orange Book Part II (Exhibit RX-407C) is the system specification for CD-R technology. McLaughlin Tr. at 1502:10-16; Mons Tr. at 444:6-12.

14. Orange Book Part III (Exhibit RX-408C) is the system specification for CD-RW technology. McLaughlin Tr. at 1502:10-16; Mons Tr. at 444:6-12.

15. The "CD-R System" is defined under both the joint and Philips-only CD-R disc license agreements as the Compact Disc Recordable System which is capable of recording signals or reading irreversibly stored signals and subsequently reproducing signals in digital form compatible with one of the CD Systems." *See, e.g.,* CX-451C (Art. 1 .05); CX-501 C (Art. 1.05).

16. Both the joint and Philips-only CD-RW disc license agreements grant licensees "a non-exclusive, non-transferable license under the Licensed Patents" "to manufacture Licensed Products" "in accordance with the relevant Standard Specifications." *See, e.g.,* CX-436C (Art. 2.01); CX-469C (Art. 2.01).

17. Much like the CD-R disc license agreements, both the joint and Philips-only CD-RW disc licenses

define a "Licensed Product" as a "CD-RW Disc," which is "designed and manufactured for recording/rewriting signals thereon and the reproduction of signals from such CD-RW Disc in accordance with the CD-Audio Standard Specification." *See, e.g.*, CX-436C (Art. 1.07); CX-469C (Art. 1.09).

18. The Orange Book sets forth technical specifications that describe the optical signal characteristics, physical arrangement, writing methods, and testing conditions for CD-R (Orange Book Part II) and CD-RW (Orange Book Part III) discs. CX-282C (p. 1).

19. First published in 1990, the Orange Book originally described only CD-R discs and recorders capable of single speed recording . Due to rapid advances in hardware and media technology, the Orange Book specification was supplemented to include description of CD-RW discs and recorders in 1996. CX-282C (p. 1).

20. There have been several changes to the Orange Book standards since they were first published. Beune, Tr. 2353; *compare, e.g.*, CX-163C *with* CX-165C.

21. The Orange Book's technical specifications for CD-R and CD-RW products promote, *inter alia*, both forward and backward compatibility, *i.e.* ensuring interoperability among existing and future discs and drives. McCarthy, Tr. 2017; McLaughlin Tr. 1513:5-25.

22. CD-R and CD-RW discs did not exist in their commercial form until after the Orange Book

specification was made available in 1989. Beune, Tr. 2376; 2342; Bratic, Tr. 1813-1814.

23. Some characteristics that the Orange Book defines for CD-R and CD-RW are not mandatory. Mons Tr. at 453:18-21.

24. A disc need not comply with the recommended or optional characteristics in the Orange Book to be considered Orange Book compliant. McLaughlin Tr. at 1504:10-18; Mons Tr. at 453:22-454:2.

25. Examples of disc features and functions that appear in the Orange Book that by the very terms of the Orange Book are not mandatory include: methods of optimum power control (OPC), Running OPC, write strategy, skip/unskip functionality, and disc identification methods. McLaughlin Tr. at 1506:7-1507:9.

26. The Red Book is a set of specifications that need to be satisfied by CD digital audio discs and players. McLaughlin Tr. at 1503:19-23; RX-2007C .

27. Dr. McLaughlin studied the Red Book because one of the purposes of the Orange Book is to ensure that CD-R discs are backward compatible to CD digital audio systems, which are covered by Red Book specifications. McLaughlin Tr. at 1504:1-9.

28. Optical Power Control (OPC) is an algorithm, a procedure carried out by an optical drive to determine the optimal write power for recording to a disc. McLaughlin Tr. at 1516:24-1518:7; Kablau Dep. Tr. at 89:24-90:4.

29. Optimum power control may be implemented by a recorder in whatever fashion the manufacturer chooses, so long as the recorded disc is Red Book compliant. Heemskerk Dep. Tr. at 308:16-309:2.

30. The method of performing OPC is not mandatory in the Orange Book because it is discussed in the "recommendations and clarifications" section of Orange Book part II at Section B3, where one possible method of performing the OPC is identified. McLaughlin Tr. at 1507:10-1508 :12; RX-407C at PH015759.

31 . The method of performing OPC is not mandatory because Orange Book part II Section B3.5 recommends designing the OPC procedure in a certain way, which indicates there is more than one option. McLaughlin Tr. at 1508:13-21; RX-407C at PH015759.

32. The method of performing OPC is not mandatory because the language in Orange Book part II Section B3.4 indicates that there is more than one option for implementing the method of OPC. McLaughlin Tr. at 1508:22-1509:2; RX-407C at PHO15759.

33. The method of performing OPC is not mandatory for Orange Book Part III for the same reasons that it is not mandatory for Orange Book Part II. McLaughlin Tr. at 1509:3-17; RX-408C at PH023331-023332.

34. Running OPC is a method to keep write power Optimum during writing. Kablau Dep. Tr. at 209:1-4.

35. Running OPC is a recommendation in the Orange Book. Kablau Dep. Tr. at 209:1-15.

36. Running OPC is not mandatory for CD-R because Orange Book Part II, Section B 14.3 states that running OPC is recommended for all CD-R recorders. McLaughlin Tr. at 1509:18-1510:6; RX-407C at P 11015779.

37. Running OPC cannot be mandatory for CD-RW because it is not mentioned at all in Orange Book part III. McLaughlin Tr. at 1510:7-11.

38. Remark 3 in section II.I.4 of Orange Book Part II states that "in a recorder, the choice of beam profile and write strategy is free." McLaughlin Tr. at 1510:12-20; RX-407C at PH015696.

39. A write strategy is a series of electrical pulses that are fed to the laser diodes, which then emits them as light to the disc. McLaughlin Tr. at 1525:14-1526:6; Kablau Dep. Tr. at 56:16-19.

40. Choice of write strategy is also free for CD-RW, as indicated in Orange Book Part III. McLaughlin Tr. at 1511:2-9; RX-408C at PH023258.

41. Orange Book Part II expressly identifies skip and unskip functionality as recommended in all CD recorders able to write in the CD digital audio format. McLaughlin Tr. at 1510:10-23; RX-407C at PH015696.

42. The skip feature is only a recommendation for the CD-RW part of the Orange Book as well. McLaughlin Tr. at 1511:24-1512:3; RX-408C at PH023266.

43. *Section B 16 of Orange Book Part II expressly states* that the use of OSJ disc identification method is on a voluntary basis and is not mandated by the Orange Book. McLaughlin Tr. at 1512:8-17 .

44. The OSJ disc identification method cannot be mandatory for CD-RW because it is not mentioned at all in Orange Book part III. McLaughlin Tr. at 1512:18-1513:2.

45. Complainant makes the Orange Book available only to licensees of patented CD-R and CD-RW technology or to entities under other contractual arrangements with Complainant. Complaint, 2.4.

46. The technical specifications in the Orange Book include certain features that Complainant alleges are covered by the patents in the pool, including the patents at issue. *See* Complaint, 12 .5.

47. Complainant licenses these patents as a package to manufacturers of CD-Rs and CDRWs. Complaint, ¶ 2.5.

48. In turn, manufacturers of CD-R discs or CD-RW discs include the features set forth in the Orange Book in order for the discs to be compatible with CD players, CD-ROM drives and MultiRead drives that are installed in personal computers and home entertainment systems that are also manufactured in accordance with corresponding Orange Book standards for those devices. *See* Complaint, ¶ 2 .5.

2. The Philips CD-R and CD-RW Patent Pools

49. In the early 1990s, Philips, Sony and Taiyo Yuden formed a pool of the CD-R patents that each own in order to license manufacturers to produce and sell Orange Book compliant CD-R discs. Philips and Sony formed a similar patent pool along with Ricoh for Orange Book compliant CD-RW discs.[72]

50. Similar pools were also formed by Philips and Sony to license patents for compatible CD-R and CD-RW recorders.

51. By 1990, the terms of the initial CD-R joint licensing program, including the royalty rate for the license, had been determined. Beckers, Dep. Tr. 62.

52. CD-R licenses were first made available in the mid-1990s. Beune, Tr. 2342.

53. CD-RW licenses were first made available shortly after CD-R licenses. Beune, Tr. 2343.

54. Sony authorized Philips to grant licenses under certain patents relating to the CD-R technology owned by Sony, as well as certain patents owned by Taiyo Yuden, which Sony has the right to license. CX-128C; CX-132C; Van Dijk, Dep. Tr. 45-47.

55. The patent holders under the joint CD-RW disc license agreement are Philips, Sony, and Ricoh. *See, e.g.*, CX-436C (p. 2).

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[72] For convenience, the patent pools of Philips, Sony, Taiyo Yuden and Ricoh in their various forms are collectively referred to hereafter as the "Philips CD-R patent pool " and the "Philips CD-RW patent pool."

56. Sony authorized Philips to grant licenses under certain patents relating to CD-RW technology owned by Sony. CX-131C.

57. Ricoh authorized Philips to grant licenses under certain patents relating to CD-RW technology owned by Ricoh. CX-129C.

58. After forming the CD-R and CD-RW patent pool, Philips invited patent holders who claimed to have patents essential to manufacturing CD-R or CD-RW products to join the licensing pool. Beune, Tr. 2336.

59. [ ]

60. [ ]

61. [ ]

62. [ ]

63. "CD-WO" and "CD-MO" were names originally used in Philips' licensing agreements for the two prevalent specifications for what was known in the market as "CD-R" technology. Eventually, CD-WO came to be accepted in the market more than CD-MO . Thus, it is CD-WO technology that today is synonymous with CD-R. *See* RX-1871C (Taiwan ROC Opinion at GT 000328-29).

64. Under the current joint CD-R disc license agreement, "Licensed Patents" are defined as those patents that are contained in pre-selected packages of patents. The packages are then "selected by Licensee" pursuant to the various options stated in the license. The packages cannot be broken into individual

patents by the Licensee. *See, e.g.,* CX-451C (Art. 1.09); RX-992C (Art. 1.10, PH 076997).

65. Under one option in the joint CD-R disc license, licensees can elect to be licensed under just a list of what Complainant refers to as the "essential" CD-R disc patent package. *See, e.g.,* CX-451C (Art. 1 .09, Option A 1); RX-992C (Art. 1.10, Option Al, PH 076998).

66. Licensees also have the option under the joint CD-R disc license of being further licensed under both the essential patent package and certain packages that Complainant refers to as "non-essential" patents related to CD-R discs . *See, e.g.,* CX-451C (Art. 1.09, Option A2); RX-992C (Art. 1.10, Option A2, PH 076998).

67. For those licensees wishing to manufacture various forms of "CD-R Hybrid Discs," the joint CD-R disc license also offers similar options to licensees for packages of either just "essential" patents relating to Hybrid CD-R discs, or packages of "essential" and certain "nonessential" patents relating to Hybrid CD-R discs. *See, e.g.,* CX-451C (Art. 1.09, Options B1, B2, B3); RX-992C (Art. 1.10, Options B1, B2, B3, PH 076998).

68. Licensees under the joint license wishing to manufacture both CD-R discs and Hybrid CD-R discs also have the option of choosing any combination of these patent package options, as long as the package of so-called "essential" patents is also taken. *See, e.g.,* CX-451 C (Art. 1.09); RX-992C (Art. 1.09, PH 076997).

69. Under the current Philips-only CD-R disc license agreement, "Licensed Patents" are defined as those patents that are contained in pre-selected packages of patents. The packages are then "selected by Licensee" pursuant to the various options stated in the license. The packages cannot be broken into individual patents by the Licensee. *See, e.g.,* CX-501C (Art. 1.09).

70. Under the current Philips-only CD-R disc license, Licensees have the option of being licensed under the list of what Complainant refers to as the "essential" patents related to the manufacture of CD-R discs, and/or the package of "essential" patents related to various types of CD-R Hybrid Discs. *See,e.g.,* CX-501C (1.09).

71 . Under the current Philips-only CD-RW disc license agreement, "Licensed Patents" are defined as those patents that are contained in pre-selected packages of patents. The packages are then "selected by Licensee" pursuant to the various options stated in the license. The packages cannot be broken into individual patents by the Licensee. *See, e.g.,* CX-469C (Art. 1.10).

72. Under the current Philips-only CD-RW disc license, Licensees have the option of being licensed under the list of what Complainant refers to as the "essential" patents related to the manufacture of CD-RW discs, High-Speed CD-RW discs, or various types of CD-RW Hybrid Discs. *See, e.g.,* CX-469C (Art. 1.10).

73. Licensees may choose to be licensed among the various patent package options offered in the CD-R and CD-RW disc agreements, as long as the package

of so-called "essential" patents is also taken. Some have chosen to take only the package of so-called "essential" patents, while others have opted to be licensed under both the package of "essential" patents and packages of "nonessential" patents. *Compare, e.g.,* CX-451C (Art. 1.09) *with* CX-483C (Art. 1.09).

74. Not all of the patents listed in the CD-R and CD-RW patent pool agreements are necessary to make a CD-R disc and therefore, non-essential patents are included in the licenses. These licenses included patents for CD audio, CD ROM, CD-I, and CD-MO discs. Bratic Tr. at 1642:6-1649:19; RX-2024C; RX-903C.

75. The earlier CD-R and CD-RW patent pool license agreements contained essential and non-essential patents, but did not identify which were essential and which patents were non-essential. Van Dijk Dep Tr. at 74:6-22; 75:17-76:8.

76. Some of the CD-R agreements include expired patents. Bratic Tr. at 1649:24-1650:11.

77. Philips made no distinction between essential and non-essential patents when it first formed the patent lists for the CD-R patent pool, but instead, offered licensees a whole package of patents that could be used by a manufacturer or disc replicator. Bratic Tr. at 1651:20-1652:17; de Vries Dep. Tr. at 78:5-14.

78. There are still licensees operating under pooled license agreements that include non-essential patents. Bratic Tr. at 1659:2-4.

79. The original CD-R standard license agreements provided licenses for a list of some 45 U.S. patents and many other foreign patents owned by Philips, Sony and Taiyo Yuden for Orange Book compliant CD-R discs. *See, e.g.*, RX-1832 (1999 Gigastorage CD-WO/MO Disc Agreement).

80. The original Philips patent pool license agreements included approximately 33 Philips U.S. patents. Bratic Tr. at 1666:21-1667:20; RX-2378.1C; RX-2024C.

81. Philips changed its list of patents in the year 2001 after the Taiwan Fair Trade Commission declared the pool licenses illegal. Bratic Tr. at 1659:5-10.

82. The number of U.S. patents in the CD-R pool license agreement that Philips calls essential has changed from approximately 44 in 1999 to 11 by 2001 – a reduction of 75 percent. Bratic Tr. at 1660:19-1663:4; 1666:3-7; RX-992C; RX-2354.

83. Whereas the CD-R pool was originally licensed to manufacturers as a single package of patents, it has evolved into a series of packages of so-called "essential" and "non-essential" patents, the former of which must be licensed by the manufacturer but the latter of which may be licensed in addition without paying any additional royalty fee. These packages have been further broken up into sub-packages consisting of the essential and non-essential patents of each licensor partner and the combined essential and non-essential patents of Philips and Sony. The many combinations of CD-R patent packages consist of exhibits to the standard "CD-R Disc Patent License Agreement" of all three partners and are

maintained on a Philips internet website. *See* "Philips Intellectual Property and Standards, CD-R/RW Patents," *at* http://www.licensingphilips.com/licensees/patent/ob/; "CD-R/RW hyperlink" (last visited on September 27, 2003). Philips' CD-RW packages are broken up into similar arrangements, but they are not shown on the Philips website.

84. Philips' CD-R and CD-RW disc licenses typically have a version number in the bottom left corner that indicate when that version of the license was introduced. Van Dijk, Dep. Tr. 113.

85. There are 4 basic types of licenses that Philips makes available to manufacturers interested in producing CD-R or CD-RW discs: (1) a joint CD-R disc license under the patents of Philips, Sony, and Taiyo Yuden; (2) a Philips-only CD-R disc license under just Philips' patents; (3) a joint CD-RW disc license under the patents of Philips, Sony, and Ricoh; and (4) a Philips-only CD-RW disc license under just Philips' patents. *See, e.g.,* CX-451C; CX-501C; CX- 469C; CX-436C; *see also* Beune, Tr. 2339.

86. In 2001 Philips modified the license to include "Option A1." According to the current 2003 license agreement (RX-992C), Option A1 now includes 11 U.S. patents that Philips claims are essential for making CD-R discs. Bratic Tr. at 1660:23-1661:7; RX-992C.

87. In addition to including 11 essential US patents under Option A1, the current modified license also includes non-essential patents for CD-R discs under Option A2, and other B options containing many other

patents relating to different types of CD-Rs, such as hybrid CD-R discs. Bratic Tr. at 1660:23-1661:24, 1662:23-1663:4; RX-992C; RX-2354.

88. Option A1 with 11 patents in the current CD-R pool agreement is the smallest grouping of patents available to licensees. Bratic Tr. at 1666:9-14.

89. The difference between Options A1 and A2 in the current CD-R license is that Option A1 only includes the essential patents for CD-R discs, whereas Option A2 includes both essential and non-essential patents for CD-R discs. RX-992C; RX-1903C tab 5; Bratic Tr. at 1681:20-1682:13.

90. The non-essential patents of Option A2 are listed in Exhibit A4 to the CD-R agreements. RX-992C; RX-1903C tab 5; Bratic Tr. at 1681:20-1682:13.

91. Option B2 under the current CD-R agreements includes non-essential patents. RX-992C; RX-1903C tab 5 ("the non-essential patents listed in Exhibit A4 for the use of one or more of these patents exclusively for the manufacture and sale of CD-R hybrid discs"); Bratic Tr. at 1683:8-16.

92. Option B3 under the current CD-R agreements includes non-essential patents. *See* RX-992C; RX-1903C tab 5 ("the licensee chooses, in addition to Option B1 above (i) Option B1. (ii) and Option B1 (iii) respectively for the use of any one or more of these patents, exclusively for the manufacture and sale of CD-R hybrid discs, the non-essential patents"); Bratic Tr. at 1683:19-1684:3.

93. The current joint CD-R disc license makes clear that "interested manufacturers may opt to take out individual licenses under the relevant patents of each of Philips, Sony and Taiyo Yuden instead of a combined license." *See, e.g.,* RX-992C (PH 0769996); CX-451 C (p. 2); Van Dijk, Dep. Tr. 53-54.

94. The joint CD-RW disc license also makes clear to licensees that Sony, Ricoh, and Philips retain the right to separately license their patents rights related to CD-RW. *See, e.g..,* CX-436C (p. 2).

95. Approximately 80% of CD-R/RW licensees worldwide are licensed under the joint licenses, while only 20% have a separate Philips-only license . Van Dijk, Dep. Tr. 61-62.

96. The basic licensing terms for each type of CD-R and CD-RW disc license are standard and include, *inter alia*, a field-of-use provision, an identification of the icensed patents, a royalty obligation, and a grantback clause . *See, e.g.,* RX-992C; CX-451 C; CX-501 C; CX-436C; CX-469C.

97. Philips CD-R and CD-RW disc licenses grant the licensee the right to make a product conforming to the Orange Book standards. *See, e.g.,* CX-451C (Art. 1.02, 1.08, 2.01); CX-501 C (Art. 1.02, 1.08, 2.01); CX-436C (Art. 1.02,1.07,2.01); CX-469C (Art. 1.02, 1.09, 2.01); Van Dijk, Dep. Tr. 65-66.

98. All of Philips' CD-R and CD-RW licenses contain a field of use provision limiting the license grant to use of the patents to manufacture "Licensed Products." "Licensed Products" are defined as either CD-R or

CD-RW discs that comply with either the CD-R or CD-RW "Standard Specifications." Accordingly, the license grants the licensee the right to use the patents to make CD-R or CD-RW discs that comply with the Orange Book Standard. *See, e.g.*, CX-451 C (Art. 1.02, 1.08, 2.01); CX-501 C (Art.1.02, 1.08, 2.01); CX-436C (Art. 1.02, 1.07, 2.01); CX-469C (Art. 1.02,1.09,2.01); Van Dijk, Dep. Tr. 65-66.

99. Both the joint and Philips-only CD-R disc license agreements grant licensees "a non-exclusive, non-transferable license under the Licensed Patents selected by Licensee ... to manufacture Licensed Products ... in accordance with the relevant Standard Specifications." *See, e.g.*, RX-992C (Art. 2.01); CX-451C (Art. 2.01); CX-501C (Art. 2.01).

100. Both the joint and Philips-only CD-R disc license agreements define a "Licensed Product" as "a CD-R Disc, and if so elected by Licensee ... a CD-R Hybrid Disc" for either data applications or CD-Audio applications. *See, e.g.*, CX-451C (Art. 1.08); CX-501C (Art. 1.08).

101. A hybrid disc is defined by the Orange Book as a CD-R or CD-RW disc with a prerecorded (stamped) first session with the ability to hold additional sessions written by the user. CX-282C.

102. Both the joint and Philips-only CD-R disc license agreements define a "CD-R Disc" as "a Disc designed and manufactured for irreversibly recording thereon digital information and which conforms to the CD-R Standard Specifications." *See, e.g.*, CX-451C (Art. 1.02); CX-501C (Art. 1.02).

103. Both the joint and Philips-only CD-R disc license

agreements define "CD-R Standard Specifications" as "the specifications for the CD-R System as made available, modified or extended from time to time." *See, e.g.*, CX-451C (Art. 1.06); CX-501C (Art. 1.06).

104. In 1997 Philips determined that 14 of its CD-R patents were essential (1 has since expired). RX-914. In 2001, the number of essential patents had been reduced to nine, and in 2003, the number was reduced to seven patents. RX-840; RX-41.

105. There were six Taiyo Yuden CD-R patents listed as essential in 2000, and the number today has been reduced to two patents. RX-695; RX-755.

106. Sony had nine CD-R patents listed as essential in 1999 and has only two today. RX-695; RX-755.

107. In every CD-R disc and CD-RW disc license agreement, both joint and Philips-only, licensees agree to pay a royalty to Philips "on each Licensed Product" that licensee sells "in which any one or more of the Licensed Patents" is used. *See, e.g.*, RX-992C (Art. 5.02 (PH 077003); CX-451C (Art. 5.02); CX-501C (Art. 5.02); CX-436C (Art. 5.02); CX-469C (Art. 5.02).

108. The royalty rate under the licenses is due so long as one patent is used by the licensee. The royalty rate does not increase or decrease if more patents or fewer patents are used. Sakkers, Dep. Tr. 86-89; Plokker Dep. Tr. 84-85.

109. The original CD-R agreements required royalty payments of three percent of the net sales price for each disc, with a minimum royalty of 10 Japanese yen. *See* RX-1832 (1999 Gigastorage CD-WO/MO

Disc Agreement, ¶ 4.02).

110. Currently under the joint CD-R disc license agreement, licensees in full compliance with their obligations under the agreement pay a royalty of 6 cents per disc. If not fully compliant, such licensees pay a 10 Yen per disc royalty. *See, e.g.*, CX-451C (Art. 5.02); Beune, Tr. 2339-40.

111. Currently under the Philips-only CD-R disc license agreement, licensees in full compliance with their obligations under the agreement pay a royalty of 4.5 cents per disc. If not fully compliant, such licensees pay a 6 cents per disc royalty. *See, e.g.*, CX-501C (Art. 5.02); Beune, Tr. 2339-40.

112. Currently under the joint CD-RW disc license agreement, licensees pay a 10 cent per disc royalty. Beune, Tr. 2340; CX-436 (Art. 5.02).

113. Currently under the Philips-only CD-RW disc license agreement, licensees in full compliance with their obligations under the agreement pay a royalty of 4.5 cents per disc. If not fully compliant, such licensees pay a 6 cents per disc royalty. *See, e.g.*, CX-469C (Art. 5.02).

114. Under the written terms of the "Most Favourable Conditions" provision in the joint CD-R and CD-RW disc license agreements, licensees are entitled to the same royalty rate as any similarly situated third party whom Philips licenses under the same patent rights but at a more favourable rate, but there are exceptions to this rule. *See, e.g.*, CX-451C (Art. 7); CX-436C (Art. 6).

115. Regarding such exceptions, the rights under the Most

Favourable Conditions provision in the licenses do not apply with respect to cross-license agreements, or any other agreement not exclusively based on royalties, or arrangements made pursuant to a court decision or a settlement of a dispute between Philips and a third party. *See, e.g.*, CX-451 C (Art. 7); CX-436C (Art. 6).

116. All of Philips' CD-R and CD-RW disc licenses, both joint and Philips-only, contain a grantback provision. The grantback required by this provision is non-exclusive, non-transferable, and must be "on reasonable, non-discriminatory conditions comparable to those set forth" in the CD-R and CD-RW license agreements themselves. *See, e.g.*, CX-451 C (Art. 2.06); CX-501 C (Art.2.07); CX-436C (Art. 2.07); CX-469C (Art.2.07).

117. Under the terms of the grantback provision found in the current CD-R and CD-RW disc license agreements, licensees must grant back to the licensors and fellow licensees a non-exclusive license "on reasonable, non-discriminatory conditions comparable to those set forth herein," on any patents they own or control "which are essential to the manufacture, use, sale or other disposal of Licensed Products." *See, e.g.*, CX-451C (Art. 2.06); CX-501C (Art.2.07); CX-436C (Art.2.07); CX-469C (Art.2.07).

118. The grantback provision is intended to prevent licensees with a blocking patent to the Orange Book standards from "holding up" licensees to the pool by refusing to license their essential patent(s). Beune, Tr. 2376; Plokker, Dep. Tr. 163; Beckers, Dep. Tr. 93-94.

119. The grantback provision applies only to patentees that develop patents that are essential to practice the

Orange Book standard. Beune, Tr. 2350; *See also, e.g.*, CX-451C (Art. 2.06); CX-501C (Art.2.07); CX-436C (Art. 2.07); CX-469C (Art.2.07).

120. While it is true that the current Philips CD-R and CD-RW licenses contain a grantback provision limited to "essential" patents, past licenses, including many still in effect, are broader, requiring the licensee to grant back all "pertinent" patents. *See, e.g.*, CX-240C at PH 002316; RPFF 792, 804-807, 812.

121. The CD-R/RW disc licenses contain a "Have Made" provision that permits a licensee to have CD-R or CD-RW discs manufactured "for it by third-party manufacturers, duly licensed by Philips under an agreement similar to" the CD-R/RW disc licenses, provided that the licensee identifies the third party manufacturer on its royalty reports to Philips, together with the quantities of discs purchased. *See, e.g.*, RX-992C (PH 077002, Art. 4.01).

122. A licensee is required to pay royalties on CD-R or CD-RW disc it purchases on a "have made" "basis, and when the licensee does so, the third party manufacturer need not pay the royalty. The royalty is paid by the company that purchases the discs from the manufacturer, unless the licensee is one that pays no royalties, even on discs purchased on a "have made" basis. *See, e.g.*, RX-992C (PH 077002, Art. 4.01); Beune Tr. 2447:1-2448:4.

123. The Philips CD-R/RW disc license agreements--whether joint or under just the Philips patents--has a standard term of 10 years. *See, e.g.*, RX-992 (PH 077010, Art. 12.01); CX-451 C (Art. 12.01); CX-

436C (Art. 11.01); CX-501 C (Art. 11.01); CX-469C (Art. 11.01).

124. There have been approximately 100 licensees since the CD-R/RW licensing program started. Beune, Tr. 2341.

125. Philips currently has 69 CD-R disc licensees and 15 CD-RW disc licensees. CX-382; CX-383.

3. Regulatory History of Patent Pools

a. The DOJ Antitrust Division Business Review Letters

126. Patent pools for technology in industries related to the CD-R industry have been reviewed by the Antitrust Division of the U.S. Department of Justice ("DOJ") in three business review letters that were issued in the middle and late 1990s. *See* CX-355 (the June 26, 1997 "MPEG-2 Business Review Letter"); CX-357 (the December 16, 1998 "3C DVD Business Review Letter"); CX-358 (the June 10, 1999 "6C DVD Business Review Letter").

127. In those letters, the DOJ placed restrictions on the types of patents that could be included in such pools in order to avoid anticompetitive effects, and set forth restrictions on the manner in which patents could be included in the pools. *See* CX-355; CX-357; CX-358.

128. In the first MPEG-2 Business Review Letter, the patents in the pool were defined as those that are "essential to compliance" with the industry manufacturing standards for the MPEG-2 product, and "there is no technical alternative to any of the

Portfolio patents within the standard." *See* CX-355 (MPEG-2 Business Review Letter at 9).

129. According to the MPEG-2 Business Review Letter, the essentiality of the patents in the pool was to be monitored by "an independent expert as an arbiter of essentiality" to review patents for inclusion in, or exclusion from, the pool. *See* CX-355 (MPEG-2 Business Review Letter at 5).

130. "The limitation of the Portfolio to technically essential patents, as opposed to merely advantageous ones," the DOJ went on in the MPEG-2 letter, "helps ensure that the Portfolio patents are not competitive with each other and that the Portfolio license does not, by bundling in non-essential patents, foreclose the competitive implementation options that the MPEG-2 standard has expressly left open." CX-355 (MPEG-2 Business Review Letter at 10).

131. Further, the DOJ opined, "[t]he continuing role of an independent expert to assess essentiality is an especially effective guarantor that the Portfolio patents are complements, not substitutes." CX-355 (MPEG-2 Business Review Letter at 10).

132. In the second 3C DVD Business Review Letter, the patent pools in question were limited to "essential" patents that were defined somewhat more broadly from the MPEG-2 pool as being "necessary (as a practical matter) for compliance with the DVD[-Video or DVD-ROM] Standard Specifications." *See* CX-357 (3C DVD Business Review Letter at p. 3).

133. In the 3C DVD Business Review Letter, the DOJ stated that it understood this definition "to encompass patents which are technically essential - *i.e.*, inevitably

infringed by compliance with the specifications - and those for which existing alternatives are economically unfeasible." *See* CX-357 (3C DVD Business Review Letter at 3 n.8).

134. In finding that no enforcement action would be triggered by this patent pool as so described, the DOJ asserted the following *caveat* in the 3CVD Business Review Letter:

> Some uncertainty arises from this definition's imprecision: Unlike the MPEG-2 pool, which required actual technical essentiality for eligibility, this pool introduces the concept of necessity "as a practical matter." On its face, this latter standard is inherently more susceptible to subjective interpretation. [footnote omitted] An excessively liberal interpretation of it could lead to the inclusion of patent rights for which there were viable substitutes. In that event, the pool could injure competition by foreclosing such substitutes.
>
> Based on what you have told us, however, the definition of "necessary (as a practical matter)" that the expert will be employing is sufficiently clear and demanding that the portfolio is unlikely to contain patents from which there are economically viable substitutes. [footnote omitted] Thus, so long as the patent expert applies this criterion scrupulously and independently, it is reasonable to expect that the Portfolio will combine complementary patent rights while not limiting competition between them and

other patent rights for purposes of the licensed applications.

CX-357 (3C DVD Business Review Letter at p.10).

135. Philips was aware of the statements by the Department of Justice in its Business Review Letters of Philips's patent pools. Bratic Tr. at 1637:17-19; Beune Tr. at 2434:11-24, 2436:4-10.

136. Mr. Beune of Philips, who was in charge of the CD-R and CD-RW licensing programs for Philips in Asia, was involved in making the request for the DVD Business Review Letter, CX-357. Bratic Tr. at 1638:4-9; Beune Tr. at 2433:12-23, 2434:25-2435:13, 2450:14-16.

137. No DOJ Business Review Letter was sought for the CD-R and CD-RW patent pools. Rubenstein Tr. at 2180:7-14; Sakkers Dep. Tr. at 95:16-22.

138. Philips did not do anything to conform its CD-R or CD-RW programs to the Department of Justice Business Review Letters until several years after receiving them. Bratic Tr. at 1638:18-1639:11; Rubenstein Tr. at 2180:7-14; Beune Tr. at 2433:20-2435:20.

b. The Taiwan Fair Trade Commission Investigation

139. In 2001, the Taiwan Fair Trade Commission ("Taiwan FTC") conducted an investigation into the Philips CD-R patent pool and ruled that it was illegal under the Taiwanese Fair Trade Law. *See* RX-1871C (translation).

140. The Taiwan FTC agreed with the complainants in its investigation that Philips, Sony, and Taiyo Yuden "control the use of the standard specification for producing CD-R" and that they "monopolize the technology market using such specifications." RX-1871C (translation at GT 000313, GT 000338).

141. The Taiwan FTC agreed with the complainants in its investigation that "[s]ince there is no other specification on the market, all CD-R manufacturers must follow the technical specifications jointly set by Philips and the other two companies. Accordingly, Philips together with the other two companies possess a monopolistic position in the field of CD-R production technology." RX-1871C (translation at GT 000313, GT 000338).

142. The Taiwan FTC determined that Philips's "activities have affected the market function of the demand/supply of CD-R patented technology license." RX-1871 C (translation at GT 000336, GT 000345).

143. The Taiwan FTC determined that "CD-R can still be segregated from other optical storage products in terms of supply-demand on current market, price, and technical functions, and it is not replaceable." RX-1871C (translation at GT 000337).

144. The Taiwan FTC determined that "Under the current market status, if supply, demand, manufacture/sale and cost are considered, there is no product possibly to substitute CD-R product." RX-1871C (translation at GT 000338).

145. The Taiwan FTC determined that "It is an undisputed fact that no other specifications exist on the market. As the said major patented technologies are owned by Philips et al. and have an absolute superior position, the chances for other enterprises to enter the subject CD-R technology license market are minimal." RX-1871C (translation at GT 000338).

146. The Taiwan FTC found that Philips, Sony and Taiyo Yuden were horizontal competitors in the CD-R manufacturing technology market through their ownership of technologies and patents related to that activity. *See* RX-1871C (translation at GT000332).

147. The Taiwan FTC further found that through their joint decision on the royalty rate and joint licensing of that technology, Philips, Sony and Taiyo Yuden had acquired a dominant position in the CD-R technology patent license market in Taiwan, had improperly maintained the royalty rate, had refused to provide licensees with important information regarding the license agreements, and had prohibited licensees from objecting to the validity of the patents in the pool. *See* RX-1871C (translation at GT000311).

148. According to the conclusions of the Taiwan FTC, the CD-R technology owned by Philips and its licensor-partners had "an overwhelmingly superior position in the CD-R patented technology license market and may exclude other enterprises from participating in competition," thereby constituting a "monopolistic enterprise" under Taiwan law. RX-1871C (translation at GT000336).

149. The Taiwan FTC also found that the royalty rate of three percent of net sales or a minimum of 10 yen did

not have a detrimental impact on manufacturers when average selling prices of CD-R discs in the world market in 1996 was $7.00 U.S. per disc, but by 2000, that price had dropped drastically to less than 50 cents U.S. *See* RX-1871 C (translation at GT000339).

150. Juxtaposed with the rapid growth in global CD-R demand and production from 1996 to 2000, which was much faster than expected, Philips' licensing profits under its existing royalty structure in 2000 would amount to 20 to 60 times that in 1997, far more than originally expected, the Taiwan FTC further found. *See* RX-1871C (translation at GT000339-40).

151. The Taiwan FTC further found that the 10 yen minimum rate under this scenario would amount to 17.8 percent of the net selling price of a disc which is far more than the licensees can bear. *See* RX-1871C (translation at GT000340).

152. Philips and its licensor partners had failed to make adjustments to its royalty structure to meet the market needs of manufacturers and had thus violated the Taiwan Fair Trade Law, according to the Taiwan FTC. RX-1871C at GT000340-41.

153. The Taiwan FTC agreed with the complainants in its investigation that Philips, Sony, and Taiyo Yuden "intended to collect royalty fees for 109 patents but failed to explain the necessity of and relation between such patents and various CD-Rs produced by the licensees. They also failed to provide detailed answers to the queries raised by domestic manufacturers." RX-1871C (translation at GT 000318, GT 000342-45.)

154. The Taiwan FTC agreed with the complainants in its

investigation that Philips, Sony, and Taiyo Yuden "only provided explanations on six out of the 109 patent[s]" on the list of patents included in the CD-R patent pool. RX-1871C (translation at GT 000318, GT 000342-45).

155. The Taiwan FTC determined that "Philips required [manufacturers] to withdraw patent invalidation applications against Philips as a condition for the settlement before signing of subject CD-R license agreement and withdrawing its criminal charges against such manufacturers." RX-1871C (translation at GT 000344-45).

156. The Taiwan FTC determined that Philips's CD-R patent pool was illegal. J. Chen Tr. at 873:2-6; L. Chen Tr. at 999:11-1000:4, 1002:2-10; RX-1871C (translation at GT 000311, GT 000348).

157. The Taiwan FTC determined that Philips, Sony, and Taiyo Yuden cannot collectively license their CD-R patents. L. Chen Tr. at 1002:2-10, 19-24; RX-1871C (translation at GT 000348.)

158. The Taiwan FTC determined that Philips should be fined in the amount of 8 million Taiwan dollars. L. Chen Tr. at 999:21-24; RX-1871 C (translation at GT 000311).

159. Philips appealed the Taiwan FTC's decision on February 27, 2001. Following a remand, the decision was ultimately affirmed. L. Chen Tr. at 1001:16-21; RX332C; RX-1964C.

160. On appeal, the Executive Yuan remanded the Taiwan FTC's determination for additional findings

in November 2001. RX-1332C at PH 066217.

161. On April 11, 2002, the Taiwan FTC issued its second decision, again finding Philips's CD-R patent pool illegal. L. Chen Tr. at 1001:16-21; RX-1964C (April 12, 2001 press release); RX-1332C (decision as published on April 20, 2002).

162. On remand, the Taiwan FTC determined that Philips, Sony, and Taiyo Yuden "misused their market power." RX-1332C at PH 066214; RX-1964C at PT 002347-48.

163. On remand, the Taiwan FTC determined that CD-R technology and discs can themselves be defined markets. RX-1332C at PH 066213; RX-1964C at PT 002344.

164. On remand, the Taiwan FTC determined that "CD-R, CD-RW and DVD are totally different products with different function where the compatibility among them is low. Thus each product can be regarded as `special market'." RX-1332C at PH 066218-19; RX-1964C at PT 002344.

165. On remand, the Taiwan FTC determined that "Philips, Sony, and TY's Orange Book has already possessed the monopoly power in the market and avoid the entry of other competitors into the market." RX-1332C at PH 066221.

166. The first Philips-only license was executed in April of 2000. Beune, Tr. 2345; CX-430C.

167. The first Philips-only license was executed after the Taiwan FTC investigation had begun but before the investigation was concluded. Its license terms are

not the same as those that appear in the standardized Philips-only licenses that have been offered since the Taiwan FTC decision was rendered. *Compare* CX-430C *with, e.g.,* RX-1904C, tab 2.

C. The EC Anti-dumping Investigation

168. The European Commission began an "Anti-dumping proceeding concerning imports of compact disks-recordable (CD-Rs) originating in Taiwan." RX-1704C.

169. In late 2001, the European Commission determined that CD-R disc manufacturers in Taiwan had been dumping their products in Europe. RX-1379C (p. 77).

170. In response to dumping of CD-R discs by Taiwanese manufacturers, the European Commission established duties on such CD-Rs, based on its investigation of pricing and volume sales to Europe and how these related to costs and other factors. RX-1379C (p. 77).

171. The duties imposed by the European Commission ranged from 18.8% to 39.3%, the lower amount charged to companies that cooperated with the EC investigation and were found to practice reasonable pricing standards. The higher charges were made to non-cooperating companies. RX-1379C (p. 77).

172. The anti-dumping duty imposed on Gigastorage was 20.1%. RX-1379C (p. 78).

173. The anti-dumping duty imposed on Princo was 29.9%. RX-1379C (p. 78).

B. Overview of the Patent Misuse Defense

No Findings of Fact.

C. Patent Pooling

174. Philips, Sony, and Taiyo Yuden did not use an independent expert to determine which patents were essential when they formed the CD-R patent pool. Bratic Tr. at 1693:5-9.

175. The royalty rate for licensing Philips patents remains the same regardless of which option(s) in the agreement one selects. Sakkers Dep. Tr. at 88:8-24.

176. Licensees are encouraged to take as many patents as they can, both essential and non-essential, because the royalty rate is the same regardless of the selection. Bratic Tr. at 1693:14-1694:5.

177. By including non-essential patents in the pool for the same royalty rate, licensees are encouraged to use the included non-essential patents instead of substitute technologies outside the pool. Bratic Tr. at 1804:11-19.

178. Very few, if any, licensees selected only Option A1. Bratic Tr. at 1676:20-1677:23.

179. When licensees must pay the same royalty regardless of whether or not they use the non-essential patents included under the license, they have little if any incentive to license competing non-essential

technologies outside the license, thus reducing or eliminating opportunities for alternative technologies to emerge. Bratic Tr. at 1693:14-1694:5.

180. A licensee who has the option to select just essential patents, or both essential and non-essential patents for the same royalty rate, will probably chose both the essential and non-essential patents. McCarthy Tr. at 2146:13-2147:7.

181. Dr. Kenneth R. Rubenstein, who refers to himself as a "neutral evaluator," has been retained by the pool to issue determinations about which of the patents in the Philips patent pools meet a particular definition of "essentiality."

182. Dr. Rubenstein began his evaluation of the CD-R and CD-RW patent pools in 2001. Rubenstein, Tr. 2190.

183. Dr. Rubenstein has a bachelor's degree in physics from MIT, awarded in 1975 and a PhD in physics from MIT, awarded in 1979. Dr. Rubenstein also has a JD from New York Law School, awarded in 1983. Rubenstein, Tr. 2169-70.

184. Dr. Rubenstein is a member of the New York bar, the New Jersey bar, and the Patent Office bar, and has practiced law for 20 years, overwhelmingly in the field of patent law. Rubenstein, Tr. 2170.

185. Since 1998, Dr. Rubenstein has been a partner at the law firm, Proskauer Rose, where he co-heads the patent group. Rubenstein, Tr. 2170-71.

186. In issuing his determinations on a patent's "essentiality" for compliance with the Orange Book,

Dr. Rubenstein includes both "technical" and "commercial" essentiality. "Commercial" essentiality, or "essentiality as a practical matter," means to Dr. Rubenstein that "the patent covers something that's not explicitly in the [Orange Book], but as a practical matter you need the patent to do something that is in the [Orange Book]." Rubenstein Tr. 2182:6-23.

187. The ultimate decision of whether to find a patent essential to a technology is Dr. Rubenstein's. Rubenstein, Tr. 2172-73.

D. *Per Se* Analysis

1. Market Power

a. Relevant Product Market

188. In this case, the "relevant product market" has been defined by the parties on two different levels. One is the market for the products themselves; namely, CD-R/RWs. The other is the market for patent licenses in CD-R/RW technology.

(i) CD-R/RW Product Market

189. As Respondents' economic expert, Mr. Walter Bratic, testified at the hearing, floppy discs, MiniDiscs, audiocasettes and flash memory cards are not interchangeable with CDR/RWs because they require individual players that a PC user having only a CD player would have to buy and install into the PC separately. *See* Bratic Tr. 1701:11-1702:18.

190. Hard drives are not interchangeable with CD-R/RWs

because they are not portable. *See* Bratic Tr. 1702:19-1703:8.

191. E-mail is not interchangeable because it can distribute data but cannot store it. *See* Bratic Tr. 1703:9-15; McCarthy Tr. 2034:8-2035:18.

192. CD-R/RWs are rapidly surpassing the once-ubiquitous high-density floppy discs as the predominant means to store and distribute programs and data. See CX-618 (Slides 20 and 21).

193. This is so because the capacity of a typical CD-R/RW, at around 700 MB, easily accommodates the large programs and data files used by present-day computers that floppy discs, with capacities of no more than 1.44 MB, cannot handle. *See* CX-50 at PA033204; McCarthy Tr. 2033:20-22.

194. CD-R/RWs have 400 to 500 times the storage capacity as 1.44 MB high density floppy disks. CX-50 at Bates No. PA033204.

195. It defies logic to think that a PC user would forego purchasing a single CD-R/RW to transfer programs and data from one computer to another in favor of purchasing 400 or more floppy discs to accomplish the same task. See McCarthy, Tr. 2128:20-2129:7 (difference in storage capacity between CD-R/RWs and floppy discs would be a factor in considering whether products are in the same market).

196. If one assumes that a 700 MB CD-R has 72 minutes of audio storage capacity and a song is three minutes long, this translates into approximately 29 MB (700/72 * 3) needed for each song. CX-50 at Bates No. PA033204 (CD-R with 700 MB). This is far more

than the 1.44 MB offered on a high density floppy disc.

197. Difference in storage capacity between CD-R/RWs and floppy discs is a factor in considering whether products are in the same market. McCarthy Tr. 2128-29.

198. Rather than switch to manufacturing floppy discs, audio cassettes, hard drives and other products when CD-R/RW sales prices declined, the Princo Respondents continued to manufacture CD-R/RWs. When asked at the hearing whether the companies had considered switching to manufacturing audio cassettes or floppy discs, Mr. Jerry Chen of Gigastorage and Mr. Louis Chen of Princo said they had not. J. Chen Tr. 965:19-966:6; L. Chen Tr. 1051:21-1052:5.

(ii) CD-R/RW Patent License Market

199. During the period from 1998 to 2000, Philips and its licensor-partners licensed no more than approximately 50 percent of discs sold worldwide; today, that number has increased to approximately 65 percent. *See* Beune Tr. 2384:19-2385:7.

200. More than 100 companies have been licensed under the Philips CD-R/RW patent pools to make discs, and about 60-70 companies remain licensed today. Beune Tr. 2341:9-22.

201. In the product market for CD-R/RWs, Philips and its licensor-partners in 2002 had a worldwide market share of only 13 percent of sales for CD-R discs and only 10 percent of sales for CD-RW discs. CX-618

(Slides 27 and 28).

202. Current and historic royalty rates for the patent pool and the sales price of the discs bear little or no correlation to one another. *See* RX-2344, RX-2345.

203. Several major technology companies, including IBM, Ericsson, QualComm, InterDigital and Rambus, are garnering an ever larger amount of their revenues from the licensing of their intellectual property rights compared to their revenues for end-products. *See* Bratic Tr. 1913:16-1916:14.

204. Philips' has received patent licensing revenues of approximately 500 million euros ($570 million) in 2002. Beune Tr. 2509:21-2510:12.

b. Relevant Geographic Market

205. Purchasers of CD-R/RW discs; *i.e.*, retailers and distributors, can look worldwide for alternative sources of supply. Manufacturers of CD-R/RW discs exist in many countries around the world. *See* Beune Tr. 2501:12-20 (Moser Baer manufactures in India); J. Chen Tr. 828:17-24; L. Chen Tr. 973:2-8 (the Princo Respondents manufacture in Taiwan, Switzerland and Germany); Wieghaus Tr. 341:25-342:9 (Mitsui manufactures in the United States).

206. Unlicensed sales represent 35 percent of the CD-R/RW market. *See* Beune Tr. 2384:19-2385:7.

207. The price and portability of information storage devices are factors in determining which products are in the same market. McCarthy Tr. at 2036:16-20.

208. The relevant geographic market for the licensing of patent rights for CD-R discs is the United States. Bratic Tr. at 1705:9-1706:23.

209. The relevant geographic market for the licensing of patent rights for CD-RW discs is the United States. Bratic Tr. at 1705:9-1706:23.

2. The Extent of Philips' Market Power in the Relevant Markets

a. The Product Market for CD-R/RW Discs

210. In the worldwide product market for CD-R/RW discs, the undisputed evidence presented by Complainant's economics expert, Dr. McCarthy, shows that worldwide demand, supply and manufacturing capacity for CD-R discs grew rapidly during the years 2000-2002 to the point where, in 2002, there was a worldwide demand for nearly six billion CD-R discs and an available supply of nearly 8 billion discs out of a total manufacturing capacity of over 10 billion discs. McCarthy Tr. 1962:21-1963:22; CX-618 (Slide 8).

211. During 1999-2001, wholesale and retail prices for CD-Rs and CD-RWs fell steadily. *See* McCarthy Tr. 1956:17-1958:7; CX-618 (Slides 5 and 6).

212. Falling product prices over time is a typical pattern in the electronics industry. *See* Smith Tr. 1486:19-25.

213. Following a rapid increase during the late 1990s, the number of manufacturers of CD-R discs peaked in

2000 and has fallen in the years thereafter. McCarthy Tr. 1965:5-11; CX-618 (Slide 9); CX-330.

214. As for the worldwide market share for the manufacture and sale of CD-R/RW discs, Philips and Sony have held only a minor share of the world's manufacturing output of CD-Rs that, combined with Taiyo Yuden's output, reached to approximately 8.8 percent in 2002. *See* McCarthy Tr. 1986:5-13; CX-618 (Slide 24).

215. With respect to the manufacturing output for CD-RWs, the collective share of Philips, Sony and Ricoh amount to approximately 2 percent in 2002. *See* McCarthy Tr. 1986:24-1987:6; CX-618 (Slide 25).

216. In terms of worldwide sales to retail outlets, the sales of CD-R discs by Philips, Sony and Taiyo Yuden amount to approximately 13 percent in 2002, and the sales of CD-RW discs by Philips, Sony and Ricoh amount to approximately 10 percent. *See* McCarthy Tr. 1989:22-1990:8; CX-618 (Slides 27 and 28).

217. During the years 1998-2000, the percentage of CD-R and CD-RW discs that were sold in which no royalties were paid to the patent pool, despite their ostensible infringement of those patents, amounted to approximately 50 percent. Beune Tr. 2384:19-25.

218. Since 2000, that percentage has dropped to about 30-35 percent. Beune Tr. 2385:1-7.

219. Prices have continued their inevitable pattern of falling despite the success of Philips and its licensee-partners in signing up over 70 percent of the world's supply of CD-R discs under the pool (*See* RX-1903C

(listing current CD-R licenses) and CX-330C (showing percent market shares for CD-R manufacturers)).

b. The Licensing Market for Essential U.S. CD-R/RW Patents

220. Philips derives approximately 500 million euros (approximately $568 million) per year from patent licensing. Beune Tr. at 2510:10-12.

221. Philips's current royalty paying licensees produce over 70% of the world's supply of CD-R discs. RX-1903C (listing current CD-R licenses); CX-330C (showing percent market shares for CD-R manufacturers).

222. No one can manufacture or sell CD-R or CD-RW discs legally in the United States without taking a license to the Philips patents. *See* McCarthy Tr. at 2038:3-3039:11; 2039:25-2040:15; Bratic Tr. 1705:25-1706:11; Complaint ¶¶ 2.4 and 2.5.

223. All CD-Rs and CD-RWs sold in the marketplace must comply with Orange Book standards. *See* Lang Tr. 234:19-25.

224. [ ]

225. The minimum royalty rates under the CD-R patent pools range from 4.5 cents to eight cents (10 yen) depending which royalty rate program is implemented.

226. Philips announced the implementation of a CD-R disc "compliance reward program" in a press

release dated November 15, 2000. CX-380.

227. The compliance reward program's terms have been incorporated directly into the standard joint license terms of recent versions of the CD-R license agreements. Van Dijk, Dep. Tr. 111-113, 163; *See also, e.g.,* CX-451C (Art. 5.02); CX-501C (Art. 5.02); Beune, Tr. 2340; CX469C (Art. 5.02); Beune Tr. 2512:24-25.

228. Under the compliance program, the Philips CD-R pool gives a licensee a CD-R royalty rate of 6 cents per disc for a license to the patents of all licensor-partners and 4.5 cents for a Philips-only license. Smith Tr. 1416:7-1417:6, 1424:9-15; Beune Tr. 2342:22-2343:3; RX-992 (CD-R Disc Patent License Agreement, ¶ 5.02).

229. In return for that rate, Philips requires the licensee to submit on a yearly basis a list of the equipment it uses to manufacture CD-R discs, and to demonstrate to Philips' satisfaction that the equipment originated from a Philips licensee; otherwise, the higher (10 yen) royalty rate applies. *See* Smith Tr.1416:17-1417:6; RX-992 (CD-R Disc Patent License Agreement, ¶ 6.01).

230. Approximately 90% of Philips' CD-R licensees take advantage of the compliance rewards programs. Beune, Tr. 2512.

231. The various Philips pool royalty rates have been maintained despite the fall in CD-R/RW prices to the point where those royalty rates now represent between 50 and 70 percent of today's average net selling price in the industry. Bratic Tr. 1725:14-

1727:11; RX-2348C; RX-2349C.

232. Subsequent to the 2001 Taiwan FTC decision finding the Philips patent pools to be illegal under Taiwan law, Respondent Gigastorage was able to enter into individual license agreements with Sony and Taiyo Yuden for the CD-R/RW patents in the pool that they owned. In comparison to royalty rates that Gigastorage was able to work out individually with Sony and Taiyo Yuden, the 10-yen rate demanded by the Philips CD-R patent pool is approximately [ ] times those individual rates. *See* J. Chen Tr. 875:21-886:20; RX-1466; RX-1872; RX-1873; RX-1875; RX-1951.

233. When Taiyo Yuden entered into its license agreement with Gigastorage, the actual royalty rate charged was put into a supplemental agreement (or side letter) rather than the main agreement. Respondents' expert, Smith, opined that "[s]ide letters are often used when one does not want the world to see the end result." Smith Tr. at 1482:5-13.

234. According to Roger S. Smith, Esq., Respondents' expert in intellectual property licensing practices in the field of information handling technology, such percentages are "outrageous" compared to industry norms, and would not allow a CD-R licensee to stay in business. Smith Tr. 1417:7-15, 1419:12-24.

235. Nonetheless, Philips and its licensor-partners have signed up more than 100 manufacturers to the patent pools and approximately 60-70 remain signatories today. Beune Tr. 2341:9-22.

236. Philips has market power in the market for CD-R patent rights. Bratic Tr. at 1706:24-1707:17.

237. Philips has market power in the market for CD-RW patent rights. Bratic Tr. at 1706:24-1707:17.

238. Patents can be a barrier to entry to being able to manufacture and sell CD-Rs in the United States. McCarthy Tr. at 2038:10-22.

239. Philips's U.S. patents act as a barrier to entry into the U.S. market for CD-R and CD-RW discs. Bratic Tr. at 1705:9-1706:23.

240. Philips has the power to exclude a company from entering the CD-R or CD-RW market. McCarthy Tr. at 2039:25-2040:15.

3. *Per Se* Misuse

a. The Royalty Rate as a Price-Fixing Restraint

241. For CD-Rs, the fixed royalty rate of the Philips patent pool is officially equal to three percent of the net selling price per disc or 10 yen (approximately 8 cents U.S.), whichever is greater. J. Chen Tr. 916:15-18.

242. Although the three-percent rate determined the relevant royalty in the early 1990s when CD-R prices were high enough to result in royalties in the order of 20 to 25 cents per disc, prices in recent years for CD-R discs have fallen to the point where only the 10-yen minimum is the

relevant per-disc royalty. Beune Tr. 2339:20-22, 2342:2-21.

243. For CD-RWs, the pool partners initially offered a joint royalty rate for all patents in the pool of three percent of the net selling price or 15 cents per disc, whichever was higher; now, that minimum rate is 10 cents per disc. Beune Tr. 2343:10-2344:1.

244. The two primary reasons CD-R prices have decreased are because consumption has increased greatly and because manufacturing costs have been reduced. J. Chen Tr. at 893:3-894:7.

245. Gigastorage began manufacturing CD-R discs in December 1997. J. Chen Tr. at 910:24-911:2.

246. Gigastorage began producing CD-RW discs in October 1998. Yang Dep.Tr.143.

247. Gigastorage had a copy of the Orange Book when it began manufacturing discs in 1997, prior to its becoming licensed by Philips. J. Chen, Tr. 908.

248. Philips contacted Gigastorage regarding the need for Gigastorage to take a CD-R/RW license as early as October 27, 1997. J. Chen, Tr. 958; CX-594.

249. By the fall of 1998, Mr. Beune had been talking with Gigastorage about executing a CD-R license agreement for more than a year. Beune, Tr. 2411.

250. Gigastorage entered into two licenses with Philips in October of 1999 - one for CD-R and one for

CD-RW. J. Chen, Tr. 915-916; RX-1832; CX-420C.

251. Under the Philips CD-RW patent pool license, Gigastorage was required to pay anon-refundable upfront payment of $25,000. RX-903C at PH 002733 (§ 4.03).

252. [ ]

253. Gigastorage's Net Selling Price for CD-R discs in 1997 was [ ] RX-1945C.

254. Gigastorage's Net Selling Price for CD-R discs in 1998 was [ ] RX-1945C.

255. Gigastorage's Net Selling Price for CD-R discs in 1999 was [ ] RX-1945C.

256. Gigastorage's Net Selling Price for CD-R discs in 2000 was [ ] RX-1945C.

257. Gigastorage's Net Selling Price for CD-R discs in 2001 was [ ] RX-1945C.

258. Gigastorage's Net Selling Price for CD-R discs in 2002 was [ ] RX-1945C.

259. Gigastorage's Net Selling Price for CD-R discs in 2003 was [ ] RX-1945C.

260. Gigastorage's Net Selling Price for CD-R discs has declined from [ ] in 1997 to [ ] in 2003. RX-1945C.

261. Gigastorage's Net Selling Price for CD-R discs

has declined 82 percent since 1997. RX-1945C.

262. Gigastorage's Manufacturing Cost for CD-R discs in 1997 was $0.975. RX-1945C.

263. Gigastorage's Manufacturing Cost for CD-R discs in 1998 was [ ] RX-1945C.

264. Gigastorage's Manufacturing Cost for CD-R discs in 1999 was [ ] RX-1945C.

265. Gigastorage's Manufacturing Cost for CD-R discs in 2000 was [ ] RX-1945C.

266. Gigastorage's Manufacturing Cost for CD-R discs in 2001 was [ ] RX-1945C.

267. Gigastorage's Manufacturing Cost for CD-R discs in 2002 was [ ] RX-1945C.

268. Gigastorage's Manufacturing Cost for CD-R discs in 2003 was [ ] RX-1945C.

269. Gigastorage's Manufacturing Cost for CD-R discs has decreased from [ ] in 1997 to [ ] in 2003. RX-1945C.

270. Gigastorage's Manufacturing Cost for CD-R discs has decreased [ ] percent since 1997. RX-1945C.

271. Gigastorage's Net Selling Price for CD-RW discs in 1998 was [ ] RX-1945C.

272. Gigastorage's Net Selling Price for CD-RW discs in 1999 was [ ] RX-1945C.

273. Gigastorage's Net Selling Price for CD-RW discs in 2000 was [ ] RX-1945C.

274. Gigastorage's Net Selling Price for CD-RW discs in 2001 was [ ] RX-1945C.

275. Gigastorage's Net Selling Price for CD-RW discs in 2002 was [ ] RX-1945C.

276. Gigastorage's Net Selling Price for CD-RW discs in 2003 was [ ] RX-1945C.

277. Gigastorage's Net Selling Price for CD-RW discs has declined from [ ] in 1998 to [ ] in 2003. RX-1945C.

278. Gigastorage's Net Selling Price for CD-RW discs has declined in [ ] percent since 1998. RX-1945C.

279. Gigastorage's Manufacturing Cost for CD-RW discs in 1998 was [ ] RX-1945C.

280. Gigastorage's Manufacturing Cost for CD-RW discs in 1999 was [ ] RX-1945C.

281. Gigastorage's Manufacturing Cost for CD-RW discs in 2000 was [ ] RX-1945C.

282. Gigastorage's Manufacturing Cost for CD-RW discs in 2001 was [ ] RX-1945C.

283. Gigastorage's Manufacturing Cost for CD-RW discs in 2002 was [ ] RX-1945C.

284. Gigastorage's Manufacturing Cost for CD-RW discs has decreased from [ ] in 1998 to [ ] in 2002. RX-1945C.

285. Gigastorage's Manufacturing Cost for CD-RW discs has decreased [ ] percent since 1998. RX-1945C.

286. Gigastorage stopped paying its royalty in August of 2000. J. Chen, Tr. 851-852.

287. At the time Gigastorage stopped paying royalties the net selling price was around [ ] cents per disc. J. Chen, Tr. 852.

288. Manufacturing costs for Gigastorage include "the materials and including the direct label and including the manufacture expense, like the depreciation, electricity and indirect labor for manufacturing, something like that." J. Chen, Tr. 865.

289. Gigastorage's net selling price for the first quarter of 2003 was [ ] cents and the manufacturing cost was [ ] cents. J. Chen, Tr. 865.

290. [ ]

291. Princo began producing CD-Rs in 1995. L. Chen Tr. at 976:1-4.

292. Princo began producing CD-RWs in 1998. L. Chen Tr. at 976:1-6.

293. Philips contacted Princo about a license for its production of CD-R discs as early as February 7,

1996. CX-235C.

294. Princo did not respond to Philips for almost an entire year, until March 26, 1997. L. Chen, Tr. 1037; CX-237C.

295. In 1997, Mr. Beune had a meeting with Princo regarding Princo's becoming licensed. Beune, Tr. 2400.

296. Princo entered into the Philips CD-R patent pool license agreement on June 23, 1997. L. Chen Tr. at 980:12-17; CX-240C.

297. Princo's Net Selling Price for CD-R discs in 1998 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

298. Princo's Net Selling Price for CD-R discs in 1999 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

299. Princo's Net Selling Price for CD-R discs in 2000 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

300. Princo's Net Selling Price for CD-R discs in 2001 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

301. Princo's Net Selling Price for CD-R discs in 2002 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

302. Princo's Net Selling Price for CD-R discs has declined from [ ] in 1998 to [ ] in 2002. CX-

183C.

303. Princo's Net Selling Price for CD-R discs has declined [ ] percent since 1998. CX-183C.

304. Princo's Manufacturing Cost for CD-R discs in 1998 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

305. Princo's Manufacturing Cost for CD-R discs in 1999 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

306. Princo's Manufacturing Cost for CD-R discs in 2000 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

307. Princo's Manufacturing Cost for CD-R discs in 2001 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

308. Princo's Manufacturing Cost for CD-R discs in 2002 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

309. Princo's Manufacturing Cost for CD-R discs has decreased from [ ] in 1998 to [ ] in 2002. CX-183C.

310. Princo's Manufacturing Cost for CD-R discs has decreased [ ] percent since 1998. CX-183C.

311. Princo's Net Selling Price for CD-RW discs in 1998 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

312. Princo's Net Selling Price for CD-RW discs in 1999 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

313. Princo's Net Selling Price for CD-RW discs in 2000 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

314. Princo's Net Selling Price for CD-RW discs in 2001 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

315. Princo's Net Selling Price for CD-RW discs in 2002 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

316. Princo's Net Selling Price for CD-RW discs has declined from [ ] in 1998 to [ ] in 2002. CX-183C.

317. Princo's Net Selling Price for CD-RW discs has declined [ ] percent since 1998. CX-183C.

318. Princo's Manufacturing Cost for CD-RW discs in 1998 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

319. Princo's Manufacturing Cost for CD-RW discs in 1999 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-

183C.

320. Princo's Manufacturing Cost for CD-RW discs in 2000 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

321. Princo's Manufacturing Cost for CD-RW discs in 2001 was[ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

322. Princo's Manufacturing Cost for CD-RW discs in 2002 was [ ] New Taiwan Dollars, which equals [ ] L. Chen Tr. at 1009:11-21; CX-183C.

323. Princo's Manufacturing Cost for CD-RW discs has decreased from [ ] in 1998 to [ ] in 2002. CX-183C.

324. Princo's Manufacturing Cost for CD-RW discs has decreased [ ] percent since 1998. CX-183C.

325. In a December 4, 1997 letter to Philips, Louis Chen of Princo complained "that there're still many CD-R manufacturers don't pay the royalty, especially inside and outside the Taiwan which make us a very bad price condition." CX-242C.

326. In early 1998, Princo made the decision to stop paying royalties to Philips under its CD-R license agreement. L. Chen, Tr. 988.

327. By the Fall of 1998, Mr. Beune had been talking with Princo about executing a license for more than a year. Beune, Tr. 2411.

328. In March, 2000, Philips terminated its license agreement with Princo. L. Chen, Tr. 993.

329. At the time Princo decided to stop paying the royalty Louis Chen does not know if they were making a profit or not. L. Chen, Tr. 989.

330. At the time that Princo stopped paying the royalty, the royalty represented [ ] of the disc's price. L. Chen, Tr. 989.

331. Princo stopped paying the royalties because some of its competitors were not paying the royalty. L. Chen, Tr. 989.

332. In the opinion of Respondents' expert on intellectual property licensing, Roger S. Smith, as a general rule in the data storage industry, a royalty is considered reasonable if it "produces income for the licensor and still allows the licensee to operate at a profit so that he can continue to manufacture, use, lease, or sell products that are covered." Smith Tr. 1409:12-17.

333. In Smith's experience in negotiating royalty rates for IBM patents in the information handling systems area, license rates of one percent or less are normal for an individual patent. *See* Smith Tr. 1409:18-25.

334. In licensing multiple IBM patents, Smith found that each patent could add one percent to the total royalty rate, but only up to a maximum of five percent. Smith Tr. 1410:1-20.

335. By contrast, the current 6-cents per disc

"compliant" royalty for a license to the entire CD-R patent pool amounts to an effective royalty rate of 40 percent of the disc selling price. Smith Tr. 1417:7-15.

336. The royalty rates under the CD-RW patent pool license agreement were three percent of the net selling price of the product, or 15 cents, whichever was the greater, and later went down to 10 cents. Smith Tr. at 1418:8-1418:14.

337. As a percentage of net selling prices, the CD-RW pool royalties are roughly 20 percent, which is unreasonable compared to ordinary industry licensing practices. Smith Tr. at 1418:15-1418:23.

338. Mr. Smith admitted on cross-examination that his knowledge about the amount of profits that CD-R/RW manufacturing licensees of the Philips patent pool have been making is limited to the experience of Respondents Princo and Gigastorage. *See* Smith Tr. 1440:20-1441:15.

339. In 2001, after the Taiwan Federal Trade Commission declared the Philips CD-R patent pool to be illegal under Taiwanese law, Respondents Princo and Gigastorage were able to secure individual licenses from Sony and Taiyo Yuden for their own U.S. patents for CD-Rs in the pool at far lower royalty rates than the combined pool rates. See Smith Tr. 1418:24-1419:4, 1422:1-23, 1423:23-1424:8; RX-1873, RX-1875, RX-1951 (Gigastorage agreements); RX-1757, RX-1865, RX-1866 (Princo agreements).

340. Philips at that time also started offering separate licenses to its own CD-R patents in the pool. Smith Tr. 1418:24-1419:4.

341. In so doing, Philips structured the royalty for its own CD-R patents under the separate license so that [ ] under the pool licenses. Smith Tr. 1425:21-1427:18; RX-2367.

342. Under the original CD-R patent pool, Philips receives [ ] percent of the pool royalty proceeds while Sony and Taiyo Yuden share the [ ] percent remainder [ ] This puts Philips' share of the 6-cent "compliant" pool royalty rate at approximately [ ] cents per disc. By contrast, under the separate license of its own patents, Philips receives a royalty of approximately[ ] cents per disc without having to share this amount with Sony and Taiyo Yuden, even though the total amount of individual royalties paid are lower. Smith Tr. 1425:21-1427:18; RX-2367.

343. This arrangement [ ] exceeds industry norms. Smith Tr. 1413:14-24; Bratic Tr. 1741-49; RX-2366-70.

344. The combined royalties paid by DVD disc manufacturers under the three DVD patent pools that were approved by the DOJ in its Business Review Letters represent a total of 33% of the current net selling price of DVD discs. *See* Beune Tr. 2399; *also see* CX-355 at p. 6 n.20; CX-357 (3C DVD Business Review Letter at p. 5); CX-358 (6C DVD Business Review Letter at p. 6).

345. In two of the three Business Review Letters, the DOJ concluded that the contemplated royalty rates were "*sufficiently small relative to the total costs of manufacture*" to render collusion unlikely. *See* CX-357 (3C DVD Business Review Letter at p. 11); CX-358 (6C DVD Business Review Letter at PHX009134) (emphasis added).

346. In the third MPEG-2 Business Review Letter, the DOJ concluded even more definitively that "since the contemplated royalty rates are likely to constitute *a tiny fraction of MPEG-2 products' prices, at least in the near term*," collusion was unlikely. CX-355 (MPEG-2 Business Review Letter at 11) (emphasis added).

347. The patent pool royalty rates charged by Philips and its licensor-partners for CD-R/RWs are significant product price components that currently equal half of Respondents' costs of manufacture. *See* L. Chen Tr. 1009:11-1010:8; CX-183C; RX-1945C (Princo and Gigastorage's 2002 CD-R manufacturing costs were between [ ] cents compared to the "compliant" pool royalty rate of 6 cents).

348. In response to the Taiwan FTC's decision that Philips's CD-R patent pools are illegal, Sony and Taiyo Yuden negotiated and entered into separate license agreements with Gigastorage. J. Chen Tr. at 873:12-20.

349. Gigastorage is currently licensed by Sony and Taiyo Yuden to manufacture CD-Rs, and by Sony to manufacture CD-RWs. J. Chen Tr. at 833:2-5; RX-1466C; RX-1872C; RX-1873C; RX-1951C.

350. Gigastorage entered into a license agreement with Sony on September 1, 2001. J. Chen Tr. at 880:1-7; RX-1466C.

351. Under Gigastorage's September 1, 2001 license agreement with Sony, the royalty Gigastorage pays is adjusted by means of an "export ratio" such that Gigastorage pays royalties only for discs sold in countries where Sony has patents. J. Chen Tr. at 880:8-882:13; RX-1466C at PHX 009626 (§ 7), PHX 009628 (§ 4(i)), PHX 009642 (calculation of actual royalty adjusted for export ratio).

352. The export ratio under the September 1, 2001 license agreement between Sony and Gigastorage is [ ] percent, meaning that Gigastorage pays royalties on [ ] percent of its licensed products sold. J. Chen Tr. at 880:8-882:13; RX-1466C at PHX 009626 (§ 7), PHX 009628 (§ 4(i)), PHX 009642 (calculation of actual royalty adjusted for export ratio).

353. Sony does not have CD-R or CD-RW patents in Taiwan. J. Chen Tr. at 881:10-25; RX-1466C at PHX 009637-39.

354. The Philips CD-R and CD-RW patent pool licenses do not include an export ratio, or any other mechanism by which royalties are adjusted to reflect countries in which Sony does not have patents. J. Chen Tr. at 885:17-886:21; RX-1832C; RX-903C.

355. The Philips CD-R and CD-RW patent pool

licenses required manufacturers in Taiwan, including Gigastorage and Princo, to pay the same royalty despite the fact that Sony did not have any CD-R or CD-RW patents in Taiwan. J. Chen Tr. at 885:17-886:21; RX-1832C; RX-903C.

356. Under Gigastorage's September 1, 2001 license agreement with Sony, the royalty Gigastorage pays is adjusted by means of a "cross-license discount" such that Gigastorage receives a [ ] percent discount for patents it has given Sony the option to cross-license. J. Chen Tr. at 882:23-884:8; RX-1466C at PHX 009628 (§ 4(ii)), PHX 009629, PHX 009640 (listing Gigastorage patents subject to cross-license), PHX 009642 (calculation of actual royalty adjusted for cross-license discount).

357. The few Gigastorage patents that Sony has the option to cross-license are not very important to Sony. J. Chen Tr. at 883:23-884:4.

358. Under its license agreement with Sony, Gigastorage pays royalties of [ ] these amounts then being reduced by the applicable export ratio and cross-license discount. J. Chen Tr. at 882:15-883:22; RX-1466C at PHX 009629, PHX 009642 (calculation of actual royalty adjusted for export ratio and cross-license discount).

359. Gigastorage entered into a new license agreement with Sony on October 1, 2002. J. Chen Tr. at 884:12-16; RX-1872C.

360. The export ratio under the October 1, 2002

license agreement between Sony and Gigastorage is [ ] percent, meaning that Gigastorage pays royalties on [ ] percent of its licensed products sold. J. Chen Tr. at 884:12-885:6; RX-1872C at GT 004588 (§§ 4(i) and 4(ii)).

361. Under its current Sony separate license agreement, Gigastorage pays Sony a royalty of [ ] per disc, factoring in the current export ratio of [ ] percent and cross-license discount of [ ] percent. J. Chen Tr. at 885:2-12; 857:2-12, 875:11-16; RX-1872C.

362. Gigastorage entered into a license agreement with Taiyo Yuden on December 31, 2001. J. Chen Tr. at 875:25-876:5; RX-1875C.

363. Gigastorage's December 31, 2001 license agreement with Taiyo Yuden has a stated royalty rate of 1.5 Yen or 5% of the Net Selling Price (whichever is lower) per disc; however, in a Supplemental Agreement executed the same day, Gigastorage was required to pay a lower royalty rate of [ ] of the Net Selling Price. J. Chen Tr. at 876:6-878:19; RX-1875C at GT 004645 (¶ 3.2), GT 004654, GT 004655-56 (Art. 4(2)).

364. Gigastorage's actual royalty rate under the December 31, 2001 license agreement with Taiyo Yuden was [ ] of the Net Selling Price. J. Chen Tr. at 876:12-878:19; RX-1875C at GT 004655-56 (Art. 4(2)).

365. In addition to royalties, Gigastorage paid [ ] to Taiyo Yuden for past use. RX-1875C at GT 004655.

366. Gigastorage entered into a new license agreement with Taiyo Yuden on December 31, 2002. J. Chen Tr. at 878:20-879:12; RX-1873C.

367. Gigastorage's December 31, 2002 license agreement with Taiyo Yuden has a stated royalty rate of 1.5 Yen or 5% of the Net Selling Price (whichever is lower) per disc; however, in a Supplemental Agreement, Gigastorage was required to pay a lower royalty rate of [ ] of the Net Selling Price. J. Chen Tr. at 878:20-879:25; RX-1873C at GT 004661-62 (¶ 3. 1); RX-1951C at GT 004658 (Art. 3(2)).

368. Under its current Taiyo Yuden separate license agreement, Gigastorage pays Taiyo Yuden a royalty of [ ] percent of Net Selling Price per disc. J. Chen Tr. at 857:2-12, 878:20-879:25; RX-1951C at GT 004658 (Art. 3(2)).

369. On March 10, 1998, Philips sent a letter to Gigastorage stating that a separate license to Philips's patents is available, but explaining that separate licenses from Philips, Sony, and Taiyo Yuden would be more expensive than the pool license. J. Chen Tr. at 846:10-847:3; RX-1098C.

370. On March 10, 1998, Philips sent a letter to Gigastorage stating that a separate license to Philips's patents is available, with the caveat that once a company enters into a separate license, it is not possible to convert it into a combined (i.e., pool) license at a later point in time. J. Chen Tr. at 846:10-847:3; RX-1098C.

371. Philips also told Gigastorage verbally that separate licenses would be more expensive than a patent pool license. J. Chen Tr. at 847:4-848:3.

372. On October 2, 1999, Philips sent Gigastorage a letter stating that separate licenses would be more expensive than a pool license. RX-1576C; Beune Tr. at 2460:22-2463:18.

373. Before signing the CD-R and CD-RW patent pool license agreements, Gigastorage considered entering into separate licenses with Philips, Sony, and Taiyo Yuden expecting that that would be less expensive than the pool license agreements. J. Chen Tr. at 855:17-856:8.

374. Before signing the CD-R and CD-RW patent pool license agreement, Gigastorage was dissuaded from entering into separate license agreements with Philips, Sony, and Taiyo Yuden because Philips told Gigastorage that separate licenses would be more expensive and because Philips told Gigastorage that separate licenses could never be converted into a joint license. J. Chen Tr. at 855:17-856:8.

375. When Gigastorage discussed with Philips entering into the CD-R patent pool license agreement, the patent list included over 100 patents and included some relating to other types of compact discs. J. Chen Tr. at 840:15-841:13.

376. When Gigastorage discussed with Philips entering into the CD-R patent pool license agreement, Gigastorage did not believe it needed a license to every patent in the pool and inquired

into obtaining a license to less than all of the patents on Philips's patent list. Gigastorage hoped that by eliminating some patents the royalty rate would be lower. Philips responded that the royalty is the same regardless of the number of patents used. J. Chen Tr. at 840:15-841:13, 848:4-11, 918:12-919:7.

377. Princo entered into a license agreement with Taiyo Yuden on January 1, 2001. L. Chen r. at 1002:25-1003:5; RX-1757C at PT 002404.

378. Princo's January 1, 2001 license agreement with Taiyo Yuden has a stated royalty rate of 1.5 Yen or 5% of the Net Selling Price (whichever is lower) per disc; however, in a Supplemental Agreement executed the same day, Princo was required to pay a royalty rate of [ ] of the Net Selling Price. L. Chen Tr. at 1005:3-1006:1; RX-1757C at PT 002406 (¶ 3.2), PT 002412, PT 002414 (Art. 4(3).

379. In addition to royalties, Princo paid [ ] to Taiyo Yuden for past use. L. Chen Tr. at 1005:3-1006:1; RX-1757C at PT 002412.

380. Princo entered into a new license agreement with Taiyo Yuden on January 1, 2003. L. Chen Tr. at 1006:5-8; RX-1866C.

381. Princo's January 1, 2003 license agreement with Taiyo Yuden has a stated royalty rate of 1.5 Yen or 5% of the Net Selling Price (whichever is lower) per disc; however, in a Supplemental Agreement executed the same day, Princo was required to pay a royalty rate of [ ] of the Net

Selling Price. L. Chen Tr. at 1006:5-22; RX-1866C at PT 002523 (¶ 3.1), PT 002534 (Art. 3(2).

382. Princo entered into a Memorandum of Understanding with Taiyo Yuden on March 27, 2002 wherein the parties agreed that Princo's royalty rate would be further reduced to [ ] of Net Selling Price if Princo fulfills the terms and conditions of the license agreement. L. Chen Tr. at 1006:23-1007:13; RX-1865C.

383. Taiyo Yuden entered into the March 27, 2002 Memorandum of Understanding with Princo lowering Princo's royalty rate to [ ] of Net Selling Price because Princo reported higher than expected royalties under its license agreement with Taiyo Yuden. L. Chen Tr. at 1006:23-1007:4; RX-1865C.

384. [ ]

385. [ ]

b. Price Discrimination

386. According to Respondents' expert, Roger S. Smith, IBM's licenses of its information storage technology patents are typically priced at royalty rates of one percent per patent, and when licenses to multiple patents are granted, the one percent rate is cumulated for each patent in the package until a maximum of five percent is reached. *See* Smith Tr. 1409:18-1410:14.

387. Any number of patents can be chosen for

licensing from IBM. *See* Smith Tr. 1472:9-20, 1490:3-8.

388. Thus, IBM's licensees have a choice of acquiring rights only to patents that they need at royalty rates that reflect the number of patents they actually acquire.

389. Certain manufacturers who sell CD-R/RW discs to Philips or its licensor-partners pay no royalty on those discs to the pool members. J. Chen Tr. 858:3-859:22; Beune Tr. 2439:1-7, 2439:20-2440:12.

390. When Philips purchases CD-Rs and CD-RWs from a disc manufacturer, the price quoted to Philips by its suppliers excludes the royalty. Beune, Tr. 2366-67.

391. Manufacturers who sell CD-R/RW discs to a company that has entered into a cross-license with Philips are not required to pay royalties to Philips on those discs. J. Chen Tr. 858:3-859:22; Beune Tr. 2439:8-20, 2444:17-22, 2447:1-8, 2450:2-4.

392. Philips has cross licenses in optical storage technology with at least [ ] companies worldwide: [ ]

393. Of these Philips cross-licensees, at least [ ] - are active in either the manufacture or sale of CD-R or CD-RW discs. RX-1379C (PH 110652-53).

394. CMC Magnetics Corporation, a CD-R and CD-RW manufacturer and patent pool licensee, sells

discs to Philips and Imation [ ] and is not required to pay royalties on those sales. J. Chen Tr. at 858:3-859:22.

395. Philips purchases its CD-Rs and CD-RWs from CMC Corporation, a manufacturer in Taiwan. Lang Tr. at 227:17-23.

396. CMC does not pay a royalty on every CD-R disc that it sells. For example, on one royalty report, CMC only paid royalties on [ ] of the CD-R discs it sold. Bratic Tr. 1751:22-1753:17; RX-1536C.

397. Ritek Corporation, a CD-R and CD-RW manufacturer and patent pool licensee, sells discs to Philips and Maxell [ ] and is not required to pay royalties on those sales. J. Chen Tr. at 858:3-859:22.

398. Lead Data, a CD-R and CD-RW manufacturer and patent pool licensee, sells discs to Sony and Maxell [ ] and is not required to pay royalties on those sales. J. Chen Tr. at 858:3-859:22.

399. [ ]

400. 42.8 percent of the market for CD-Rs in the Americas does not require a royalty payment to Philips. RX-3003; McCarthy Tr. at 2113:18-23.

401. 41.91 percent of the global market for CD-Rs does not require a royalty payment to Philips.

RX-3003; McCarthy Tr. at 2113:18-23.[73]

402. Gigastorage does not sell CD-Rs or CD-RWs to any companies that are CD-R or CD-RW patent pool licensors, or that are cross-licensees of Philips's; therefore all of its sales are subject to royalties. J. Chen Tr. at 862:18-21.

403. Having to pay royalties on 100 percent of its CD-R and CD-RW sales places Gigastorage at a significant competitive disadvantage to manufacturers that are not required to pay royalties. The competitive disadvantage is significant because the royalty rates are so high, comprising a large percentage of the Net Selling Price, and adding significantly to Gigastorage's costs. J. Chen Tr. at 862:22-863:6.

404. Gigastorage cannot stay in business unless it can make some royalty-free sales. McCarthy Tr. at 2086:14-21.

405. Based on Gigastorage's current Net Selling Price and manufacturing costs, paying Philips's patent pool royalty rate of 10 Yen per disc would increase Gigastorage's price per CD-R disc by [ ] percent. J. Chen Tr. at 866:6-17; RX-1945C.

406. Based on Gigastorage's current Net Selling Price and manufacturing costs, paying Philips's individual license royalty rate of 6 cents per disc would

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[73] Respondents made a clerical error when transposing the value for Sony's market share, resulting in a figure of 40.56%. The correct percentage is 41.91%, as shown by including the correct market shares number for Sony in the addition.

increase Gigastorage's price per CD-R disc by [ ] percent. J. Chen Tr. at 866:6-17; RX-1945C.

407. Since the royalty under the Philips-only license is 6 cents per disc and paying that royalty would increase Gigastorage's current manufacturing costs by [ ] percent, CD-R manufacturers who do not pay royalties on sales to Philips and Philips's cross-licensees gain a competitive cost advantage of [ ] percent. J. Chen Tr. at 866:18-24; RX-1945C.

4. Conclusion on *Per Se* Misuse

E. "Rule of Reason" Analysis

1. Scope of the Patent Grant

2. Application of "Essentiality" Standards to Patents in the Pools

408. The decision whether a patent owned by Philips and its licensor-partners that involves D-R/RW technology is to be included in the pools has been assigned by the pools to Dr. Kenneth Rubenstein, a patent attorney with a PhD. in physics, who decides whether the patent is "essential" and therefore included, or "non-essential" and therefore excluded. *See* Rubenstein Tr. 2172:22-2173:7.

409. Dr. Rubenstein considers himself to be an "independent evaluator" of the essentiality of patents submitted to him for inclusion in the pools, not merely an attorney in an attorney-client relationship with Philips or any of its licensor partners. *See* Rubenstein Tr. 2171:24-2172:6, 2191:9-18.

410. Dr. Rubenstein has performed in this capacity with the MPEG-2 and DVD patent pools that were the subject of the Department of Justice's three business review letters. *See* Rubenstein Tr. 2173:8-14.

411. The CD-R/RW pools were the only pools Dr. Rubenstein's group has ever examined where licensing activity had begun *prior* to the analysis. Rubenstein Tr. 2314.

412. In deciding whether a patent is "essential," Dr. Rubenstein breaks his analysis into two subparts - whether the patent is "technically essential" and whether the patent is "essential as a practical matter" (also referred to by Dr. Rubenstein as "commercially essential"). *See* Rubenstein Tr. 2182:14-23.

413. In one of his status reports to Sony rendering decisions on the essentiality of patents that Sony submitted to him for inclusion in the CD-R patent pool, Dr. Rubenstein gave his definition of a patent that is "technically essential" to the pool as being one wherein "at least one claim of the patent covers (*i.e.*, is essential to implement) a portion of the Specifications for Recordable Compact Disc Systems, Part II: CD-R, Version 3. 1, December 1998 (`the CD-R Standard')"; that is, the CD-R section of the Orange Book. *See, e.g.*, CX-563C (July 3, 2001 Rubenstein Status Report at PH065751).

414. Because a manufacturer practicing the Orange Book standard infringes the patent, Dr. Rubenstein does not consider whether any alternative patents or technology exists that would allow the licensee to accomplish the purpose of the standard. In Dr. Rubenstein's view, a licensee practicing the standard

infringes the patent and needs a license to the patent to manufacture the product. Rubenstein, Tr. 2208, 2213.

415. Dr. Rubenstein further testified that if he decides that a patent is not "technically essential," he then decides whether the patent is nevertheless "essential as a practical matter" and should nevertheless be included in the pools on that basis. See Rubenstein Tr. 2184:15-25.

416. To Dr. Rubenstein, "essential as a practical matter" means that the patent "must be shown to have at least one claim having no commercially reasonable alternative for implementing a portion of the CD-R Standard." CX-563C (July 3, 2001 Rubenstein Status Report at PH065751).

417. In making the determination as to whether a patent is "essential as a practical matter," Dr. Rubenstein looks at "what's going on in the marketplace" to See if substantially all of the relevant products practice the patent; if many do not, then he considers a commercially feasible alternative to exist and he finds the patent to be commercially non-essential as well as technically non-essential. *See* Rubenstein Tr. 2185:8-25.

418. According to Dr. Rubenstein, commercial essentiality is a time-dependent issue, such that something that may have been commercially essential two or three years ago may not be now. Rubenstein Tr. at 2286:19-2287:7.

419. According to Rubenstein, the pool "should follow the technology," meaning that when the technology

changes, patents in the pool that were previously commercially essential should be re-evaluated to determine if the industry is still using them. Rubenstein Tr. at 2287:8-17.

420. According to Dr. Rubenstein's status report to Sony, when a patent is submitted by Philips or its licensor-partners for inclusion in the pools on the basis of essentiality as a practical matter, Dr. Rubenstein asks the submitting company for evidence that demonstrates such essentiality, which can come in several forms as follows:

> Preferably, evidence submitted should describe: the technical/commercial reason(s) why the invention claimed in the patent is the only practical way to implement part of the CD-R Standard; any known alternatives to the invention claimed; and why these alternatives are not used. The evidence may also cover a study of the products available in the market to demonstrate that substantially all (*e.g.*, 90% or more) of the market infringes one or more claims of the patent. Other forms of evidence that similarly demonstrate pervasive use in the marketplace of the patent or patents may be provided.

CX-563C (July 3, 2001 Rubenstein Status Report at PH065751).

421. In practical terms, this practice means that if Dr. Rubenstein and his staff are unable to find a patent technically essential in some cases, they will rely

upon test data submitted by the patentee to make the determination about a patent's commercial essentiality. Rubenstein, Tr. 2184; 2273:25-2274:12, 2275:23-2276:5; CX-315C (PHX 009036 – PHX 009037).

422. If a new technology develops on CD-R/RW discs that most of the industry accepts and a pool member submits a patent covering that new technology, that can effectively preclude non-pool members from competing in this area. Rubenstein Tr. at 2286:4-20; 2287:18-2288:5.

423. According to Dr. Rubenstein, approximately 50 patents have been submitted to him for review by Philips and its licensor-partners, and that of these, approximately 30 have been included in the pools as "technically essential" whereas two have been included as "essential as a practical matter." *See* Rubenstein Tr. 2195:20-2196:13; *also see, e.g.*, CX-563C; CX-564C; CX-565C; CX-569C; CX-572C.

424. Philips' CD-R/RW patent pool licensing agreements have a provision that requires a licensee that has an "essential patent " (*i.e.*, both "technically" essential and essential "as a practical matter") to grant such patent back to the licensors and other licensees on reasonable terms and conditions, including the payment of a royalty. Smith Tr. 1448:2-22; RX-992C (Philips CD-R Disc Patent License Agreement § 2.06, at PH077998 and PH077001).

425. During the 1990s, this "grantback" provision required a grant back of all "pertinent" patents, not all "essential" patents. Bratic Tr. 1779:21-1780:23.

426. Several CD-R and CD-RW licensees continue to operate under licenses with grantback clauses that require them to grant back all "pertinent" patents. *See, e.g.*, RX-1903C, tab 2 (¶ 2.07), tab 4 (¶ 2.07), tab 7 (¶ 2.07), tab 9 (¶ 2.07); Bratic Tr. 1781:3-6.

427. There have never been any grantbacks under the CD-R or CD-RW disc license agreements. Bratic Tr. 1781:20-1782:4; Beune Tr. 2354:4-7.

428. The current grantback provision in Philips' license agreements tracks a similar provision requiring a grantback of "essential" patents that was reviewed by the DOJ in its 3C DVD business review letter and was not found to be anticompetitive. *See* CX-357 (3C DVD Business Review Letter at pp. 12-13).

429. According to Dr. Rubenstein, there are several differences between his definitions of "essentiality" and Dr. McLaughlin's that cause him to include more patents in the pools as "essential" than Dr. McLaughlin does. Rubenstein Tr. 2206:11-14, 2210:2-18.

430. The principal difference, according to Dr. Rubenstein, is that he deems patents to be essential if they cover any section of the Orange Book, whereas Dr. McLaughlin does not count patents that cover technology identified in the Orange Book as only "recommended" or "optional." *See* Rubenstein Tr. 2209:15-25, 2211:14-2214:11.

431. Another difference Dr. Rubenstein perceived was that Dr. McLaughlin included theoretical alternative technologies as substitutes, not just alternatives that

actually exist in the marketplace. *See* Rubenstein Tr. 2214:12-2216:25.

432. Although it is not mandatory for a CD-R or CD-RW disc to comply with some portions of the Orange Book, according to Dr. Rubenstein those provisions are nevertheless so integrated with other mandatory sections that it is best to view the Orange Book as a whole. *See* Rubenstein Tr. 2295:8-2296:7; RX-407C (Orange Book CD-R Standard § 1.3 at PH015684) ("All parts in this document are mandatory unless they are specially defined as recommended or optional or informative.").

433. In its business review letters, the Department of Justice noted that it understood "essentiality" to "encompass patents which are technically essential - *i.e.*, inevitably infringed by compliance with the specifications - and those for which existing alternatives are economically unfeasible." CX-357 (3C DVD Business Review Letter at 3 n.8).

434. However, the DOJ expressed misgivings that the definition of essentiality "as a practical matter" could be interpreted too liberally:

> If our understanding of the criterion "necessary (as a practical matter)" is correct, [footnote omitted] then it appears that the Licensors intend to license through the pool only complementary patents for which there are no substitutes for the purposes of compliance with the Standard Specifications. Some uncertainty arises from this definition's imprecision: Unlike the MPEG-2 pool, which required actual technical essentiality for eligibility, this pool introduces the concept of necessity "as a practical matter." On its

face, this latter standard is inherently more susceptible to subjective interpretation. [footnote omitted] An excessively liberal interpretation of it could lead to the inclusion of patent rights for which there were viable substitutes. *In that event, the pool could injure competition by foreclosing such substitutes.*

CX-357 (3C DVD Letter at 10) (emphasis added).

435. From Dr. Rubenstein's point of view, the procompetitive impact of his "commercial essentiality" criterion is that it provides licensees with all the patents they need to make an Orange Book compliant CD-R or CD-RW disc by including all patents found by Dr. Rubenstein to be used by virtually all of the CD-R/RW market in addition to those that are "technically essential" to Orange Book compliance. *See* Rubenstein Tr. 2279:7-16.

436. Submitting a patent to Dr. Rubenstein for evaluation as to whether it can be included in the pool is voluntary on the part of the pool member. Rubenstein Tr. 2320:18-2321:14.

437. Dr. McLaughlin's definition of "essential as a practical matter" includes "only complementary patents for which there are no substitutes," which is the same definition that the DOJ found acceptable. *See* CX-357 (3C DVD Business Review Letter at 10).

438. Dr. Rubenstein claimed that he continually reviews his essentiality determinations and can remove a patent from the pools if competing alternative technologies have arisen that render the patent no

longer "essential as a practical matter." *See* Rubenstein Tr. 2286:4-2287:7.

439. Manufacturers know enough about the patents in the pools to realize that they are being forced to license technology that they do not want. *See* J. Chen Tr. 918:4-920:7. The testimony of Jerry Chen to this effect is as follows:

> Q You had a copy of the license and the patent list before you entered into the license; is that right, sir?
>
> A In the --
>
> Q No, I'm just asking you, you had a copy of the license and the patent list before you entered into the license with Philips?
>
> A They give us, yes.
>
> Q And you didn't look at that patent list, did you?
>
> A Of course, yes. I just explained that. I will explain again. Before we signed the patent license, we have a patent list, because Philips offer us so-called standard joint license agreement to us, so of course, including the patent list. But in the patent list, there are over 100, over 100 patents. So -- and also, there are a lot of irrelevant patents in the list, for example the CD audio, CD-ROM and CD-I, and also the CD-MO patent in the list. Of course, we have a list, and also, we expressed such opinion to Philips Taipei. So I have a

phone with Danny Lin. He's a manager of Philips Taipei who is in charge of patent licensing in Taiwan. I, on the phone, spoke with him regarding this issue, those patents we don't need, why they need to put in the list. But we got the answer I just explained. We got the answer, even if you use one patent of the list or two or more, you still need to pay the same royalty rate, the same amount. So I have, before, we signed a joint license agreement.

Q Mr. Chen, I want to direct you to tab 2 of your binder, which is a copy of your deposition testimony, and direct your attention to page 158, line 13. Page 158, line 13. A Line 13.

Q You testified at your deposition "I have looked at the patent list, this is an attachment to the agreement, and there are so many numbers that I didn't look at them in detail, and I remember there were over 100." Do you remember that testimony?

A Yeah, that's my answer, right.

JUDGE HARRIS: Yes, he remembers that.

BY MS. AQUINO:

So you didn't look at the patents in detail; correct?

A Yes. I also explained that we have a patent list, but we don't have the patent in very detail, but from the patent list, I remember in

> the deposition, I also explain to you, it's very easy to take a look in the list, there are different category for the patent. So at that time I explained to you they are CD audio, CD-ROM and CD-I and also the CD-MO in the patent list. So it's very obvious we don't need that, but in the detail, we don't have time, we don't have the manpower to go into the detail, and also, that's over 100 patents.

J. Chen Tr. 918:4-920:7.

3. The Presence of Non-essential Patents in the Pools

440. Among the patents in the Philips CD-R and CD-RW pools that have been identified by the Staff as non-essential are Sony's U.S. Patent No. 4,942,565 (the "Lagadec `565 patent") and Philips' U.S. Patent No. 5,001,692 (the "Farla `692 patent"). *See* SPHB at 23. Neither of these patents have been asserted by Complainant as having been infringed by Respondents.

441. Respondents, in addition to identifying the Farla `692 patent as non-essential, contend that Philips' U.S. Patent Nos. 4,962,493 and 4,807,209 (the "Kramer `493 and `209 patents") in the pools are non-essential. The Kramer patents have been asserted by Complainant as being infringed by Respondents.

442. Respondents also identify as non-essential the following patents in the pools, which Complainant has not asserted as being infringed by Respondents: (i) Sony's U.S. Patent No. Re. 34,719 (the "Yamamoto `719 patent"); (ii) Ricoh's U.S. Patent

No. 5,740,149 (the "Iwasaki `149 patent"); (iii) Sony's U.S. Patent No. 5,126,994 (the "Ogawa `994 patent"); (iv) Philips' U.S. Patent No. 5,978,351 (the "Spruit `351 patent"); (v) Philips' U.S. Patent No. 5,060,219 (the "Lockhoff `219 patent"); (vi) Philips' U.S. Patent No. 5,83 5,46 (the "Mimnagh `462 patent"); and (vii) Taiyo Yuden's U.S. Patent Nos. 4,990,388 and 5,090,009 (the "Hamada `388 and `009 patents"). *See* RPHB at 12 and 15-16.

443. Dr. Rubenstein has not yet made an essentiality determination for U.S. Patent No. 5,001,692, the Farla patent. Rubenstein Tr. at 2232:19-25; 2235:8-12; RX-1472.

444. Dr. Rubenstein has not yet made an essentiality determination for U.S. Patent No. 5,740,149, the Iwasaki patent. Rubenstein Tr. at 2236:1-4; RX-52.

445. Dr. Rubenstein has not yet made an essentiality determination with respect to United States Reissue Patent No. 34,719, the Yamamoto patent. Rubenstein Tr. at 2263:1-10; RX-50.

446. Dr. Rubenstein has not yet made an essentiality determination with respect to United States Patent No. 5,001,692 (RX-3007C). Rubenstein Tr. at 2263:17-2264:12.

447. Dr. Rubenstein has concluded that only two patents are essential as a practical matter: United States Patents Nos. 4,990,388 and 5,090,009 issued to Hamada and assigned to Taiyo Yuden. Rubenstein Tr. at 2250:4-22.

448. Philips recognized that its nonessential patents could

be in competition with those of its licensees: "The non essential patents or nice to have patents. There is no need to license and it would, *we thought it would be good to have these non essential patents as a defense against patents of licensees*, which would not be the license back to Philips anyway, at least not for free." RX-1488 (Beckers Depo. at 85) (emphasis added).

449. Calimetrics' OPC and write strategy methods are commercially viable. McLaughlin Tr. at 1563:1-12.

450. Calimetrics' OPC procedure and write strategy has been applied to CD-R and CD-RW discs and has been shown to be effective, *i.e.* able to produce Orange Book-compliant discs. McLaughlin Tr. at 1564:17-23.

451. Calimetrics has licensed its OPC and write strategy method to [ ] and to [ ] McLaughlin Tr. at 1566:4-8.

452. The two-beam mastering method is a commercially viable alternative to the Yamamoto `719 patent. McLaughlin Tr. at 1568:3-14.

453. The Calimetrics OPC procedure and the two-beam mastering system would satisfy the commercial essentiality criteria that Dr. Rubenstein applies as a part of his essentiality analysis because both are cost effective and implementable. McLaughlin Tr. at 1568:15-20; 1570:1-9.

454. The Calimetrics OPC method is an alternative to each of the Ogawa `994 patent, the Iwasaki `149 patent, the Spruit `351 patent, and the Farla `692

patent. McLaughlin Tr. at 1571:3-9.

455. Calimetrics has been affected by the Philips CD-R and CD-RW patent licenses because it experiences difficulty licensing its competing write strategy and OPC methods. McLaughlin Tr. at 1572:4-15; 1574:6-20.

456. The effect of having the patents on the OPC and write strategy technology in the CDR/RW patent pools is that when Calimetrics tries to license its technology, the target companies will not consider the Calimetrics technology, even if superior, because they already have a license under the Philips patent pool. McLaughlin Tr. at 1575:15-1576:2.

a. The Sony Lagadec`565 Patent

457. In April of 2001, Sony submitted the Lagadec `565 patent - the same patent asserted by the Princo Respondents in support of their invalidity arguments as to the `856 and `825 patents - to Dr. Rubenstein for the purpose of including it in the Philips CD-R patent pool as essential for the practice of the CD-R standard. RX-1800.

458. Dr. Rubenstein agreed with Sony that Lagadec was "technically" essential, meaning that in his view, at least one of its claims covered at least a portion of the Orange Book standards. *See* CX-563C (July 3, 2001 Rubenstein Status Report on the Study of Sony's Patent Submissions for CD-R at PH065751).

459. Dr. Rubenstein found that in Lagadec, "[a]t least claim 6 is essential for a disc with a substrate, a recording layer, and a protective layer, where the

substrate has a substantially spiral wobbled pregroove formed thereon by a control signal consisting of a carrier frequency (22.05 kHz) modulated by an AT1P signal," which he found consistent with certain sections of the Orange Book. *See id.* at PH065753.

460. "ATIP" stands for "Absolute Time In Pre-groove," standing for the methodology for inputting time-code information in the CD-R groove. See RX-407C (Orange Book CD-R Standard § 1.4.1 at PH015685 (definition of "ATIP")).

461. Since the patent was technically essential in his view, Rubenstein expressly chose not to reach the issue of whether Lagadec was also essential "as a practical matter." CX-563C (July 3, 2001 Rubenstein Status Report on the Study of Sony's Patent Submissions for CD-R at PH065752).

462. As a consequence, the Lagadec `565 patent was then added to the CD-R "essential" patent list and remains on the most current list. *See, e.g.*, RX-695 at PH 086957; RX-41 at PH 108046.

463. Prior to Sony's submission of the Lagadec `565 patent to Dr. Rubenstein, that patent had never been on the list of essential CD-R patents. *See, e.g.*, RX-755 (Exhibit B4).

464. According to the testimony of Hans Mons, a Philips engineer who worked with Philips and Sony technicians on the cooperative efforts of both companies to develop CD-R technology, the Lagadec digital method for storing time code information proposed by Sony during that phase of the project

was rejected by both Philips and Sony in favor of Philips's frequency-modulated AT1P method. See Mons Tr. 394:19-409:2. "I think that was in the next meeting that Sony decided to accept the ATIP proposal," Mons testified, "because in the next meeting, they had evaluated our ATIP proposal and the discs. They had written information on it, and what they told us, that it was simple and it worked well, and they silently withdr[e]w their own proposals." Mons Tr. 408:33-409:2.

465. Dr. Hesselink testified that Lagadec would not work with a CD-R system: "As a result, Philips and Sony dismissed the Lagadec approach because this is a very difficult problem to solve and Lagadec just did not provide a scheme that would work and was reliable and could be used for a variety of different purposes as is required under these patents." Hesselink Tr. 2585:1-5.

466. According to Mons, Philips and Sony jointly addressed during the CD-R development phase the issue of having the "absolute time" encoded into the pregroove of a disc. Mons Tr. 385:10-386:24.

467. The two companies came up with two different ways to solve this problem. Philips came up with the ATIP method of analog modulation of the frequency of the "wobble" signal of the pregroove, whereas Sony came up with two alternative methods, one of which was a digital modulation of the wobble signal. Mons Tr. 399:21-401:2, 401:6-403:13.

468. The digital modulation alternative ultimately formed the basis of Sony's Lagadec `565 patent. *See* Hesselink Tr. 2585:1-13.

469. In arguing that the Lagadec `565 patent did not anticipate the `825 patent at issue, Dr. Hesselink testified at trial that the digital modulation methodology of Lagadec differs substantially from the analog modulation technology of the `825 patent:

> So if you look at this signal, this is a digital approach. And in fact, it turns out that Lagadec discloses in its patent that he doesn't want to use an analog approach because there are some problems with the analog approach in his opinion. And so he opts for a digital approach....
>
> ***
>
> Furthermore, there is a real difficulty with actually analyzing this information in a player or reading it out and trying to decode it, because there's only one area in this code where you have to make sure that you understand that this transition is now twice as long. And so the measurement of this is prone to errors, and it is very difficult to carry out a decoding of this particular approach.
>
> ***
>
> Lagadec has a broad spectrum. Rijnsburger has a broad spectrum. They do not look like frequency-modulated signals. They don't act like frequency-modulated signals and they don't produce the results of a frequency-modulated signal. As a result, Philips and Sony dismissed the Lagadec approach because this is a very difficult problem to solve and Lagadec just did not provide a scheme that would work

and was reliable and could be used for a variety of different purposes as is required under these patents.

Hesselink Tr. 2580:16-21, 2581:7-14, 2584:25-2585:5.

470. The Orange Book relies upon Philips' ATIP technology, not Lagadec's digital technology. *See* CX-563C (July 3, 2001 Rubenstein Status Report on the Study of Sony's Patent Submissions for CD-R at PH065753); RX-407C (Orange Book CD-R Standard § IV).

b. The Philips Farla `692 Patent

471. The claims of the Farla `692 patent are directed to a particular method of carrying out a strategy for writing data, otherwise known as a "write strategy," onto a blank recordable disc. In particular, the patent relates to whether additional write pulses or additional information relating to the write pulses is necessary for the write strategy. McLaughlin Tr. 1525:18 1526:6; RX-1472.

472. The methodology and claims of the patent are directed to optimizing the writing accuracy of an optical recorder when faced with the properties of a particular disc. *See* RX-1472 (`692 patent, col. 1:67-2:3).

473. On May 21, 2001, Dr. Rubenstein sent Philips a status report in which he stated that the Orange Book CD-R standard did not appear to require the Farla `692 patent and therefore was not "technically essential." RX-1792 (May 21, 2001 Rubenstein

Status Report re Study of Philips' Patent Submissions re CD-R at RK005216).

474. Dr. Rubenstein analyzed the following passage from independent claim 1 of the patent, which is similar to the language of independent claims 10 and 13:

> ... a record carrier having optically readable adjustment information signifying whether a sequence of write pulses for recording a bit sequence ....
>
> said adjustment information signifying the number and relative positions of said additional pulses in a write pulse sequence ....

RX-1792 (May 21, 2001 Rubenstein Status Report re Study of Philips' Patent Submissions re CD-R at RK005216); *also see* RX-1472 (`692 patent, col. 16:27-33).

475. According to Dr. Rubenstein's status report, the "adjustment information" limitation of the claim could be viewed as the "special information" encoded in the ATIP frames of the Lead-in Area" of an Orange Book compliant CD-R disc, but "this `special information' does not appear to provide information about having additional write pulses (*i.e.*, increasing the number of write pulses)." RX-1792 (May 21, 2001 Rubenstein Status Report re Study of Philips' Patent Submissions re CD-R at RK005216), *citing* RX-407C (Orange Book CD-R Standard § IVA).

476. Dr. Rubenstein also pointed out that the "Optimum Power Control" ("OPC") procedure described in the

Orange Book "did not appear to require writing additional pulses" or "varying the number or relative positions of additional write pulses in accordance with `adjustment information'" as claimed in the `692 patent. RX-1792 (May 21, 2001 Rubenstein Status Report re Study of Philips' Patent Submissions re CD-R at RK005216), *citing* RX407C (Orange Book CD-R Standard Attachment B3).

477. Dr. Rubenstein noted, however, that his group did not know if the Farla `692 patent was nevertheless "essential as a practical matter," and invited Philip to comment further on that possibility. RX-1792 (May 21, 2001 Rubenstein Status Report re Study of Philips' Patent Submissions re CD-R at RK005217).

478. In his status report, Dr. Rubenstein defined a patent that is "essential as a practical matter" as one having "at least one claim which is found to have no realistic alternative for implementing the CD-R Standard (or a portion thereof). However, for a patent to be found essential on this basis, evidence must be submitted that demonstrates such essentiality." RX-1792C (May 21, 2001 Status Report at RK005214). The evidence, according to the status report definition, could include, *inter alia*, "technical/commercial reason(s) why the invention claimed in the patent is the only practical way to implement part of the CD-R Standard ...." *Id.*

479. On May 16, 2002, Dr. Rubenstein again wrote Philips in reference to the essentiality of the Farla `692 patent to the Orange Book CD-RW standard. *See* RX-1781 C (May 16, 2002 Rubenstein Status Report on CD-R & CD-RW Patent Evaluation for CD-R & CDRW Patent Licensing Programs at

RK00793 0-3 1).

480. Dr. Rubenstein's findings for CD-RW matched his earlier findings for the CD-R standard that the patent was not "technically essential." *Id.* Again, he requested information from Philips as to whether the Farla `692 patent was nevertheless "essential as a practical matter" for the CD-RW standard. *See* RX-1781C (May 16, 2002 Rubenstein Status Report on CD-R & CD-RW Patent Evaluation for CD-R & CD-RW Patent Licensing Programs at RK00793 0-3 1).

481. Respondents' expert, Dr. McLaughlin, opined that the Farla `692 patent is not necessary to practice the CD-RW portion of the Orange Book. *See* McLaughlin Tr. 1525:14-1528:8.

482. Dr. McLaughlin also testified that at least one economically viable alternative for performing write strategy exists that does not infringe the Farla patent. McLaughlin Tr. 1563:1-12.

483. Dr. McLaughlin identified an OPC and write strategy method available from Calimetrics, Inc., where he is employed as a Principal Scientist, as an alternative that is not covered by the Farla `692 patent and that would comply with the requirements of the Orange Book if it were used. McLaughlin Tr. 1493:3-8; 1520:16-22, 1521:12-1522:13, 1527:7-1528:8.

484. According to Dr. McLaughlin, the Calimetrics OPC and write strategy method uses a write strategy matrix. McLaughlin Tr. 1519:12-22. It examines information that has been written to a recordable disc and information to be written to the disc, and uses the write strategy matrix to define the strategy for

writing data onto the disc by appropriately setting the power of the write laser. *Id.* It has been applied to CD-R and CD-RW discs, and has been shown to operate and to be effective in Orange Book-compliant discs. McLaughlin Tr. 1564:17-23.

485. The Calimetrics OPC and write strategy method is not covered by the Farla `692 patent. McLaughlin Tr. 1527:7-1528:8. In particular, the Calimetrics method does not use or examine information from a disc to ~~make a~~ determination if additional write pulses are necessary to record a particular sequence of information onto the disc. *Id.*

486. The Farla `692 patent was included in the CD-R license agreement for many years before it was removed from the list of essential patents in 2001. *Compare* RX-840; RX-778; RX-755; RX-914.

487. At least as of a license agreement signed in January 2002, the Farla `692 patent was still being listed as an essential patent under the CD-RW license agreement. *See* RX-770 at PH087634.

488. It is unclear whether the Farla `692 patent remains listed on Philips' standard license agreements as an essential patent in the CD-RW pool. Philips' website of form license agreements does not include the lists of essential and non-essential patents for the CDRW disc pool. *See* "Philips Intellectual Property and Standards, CD-R/RW Patents," *at* http://www.licensing.philips.com/licensees/patent/ob/ (CD-R/RW hyperlink) (last visited on August 26, 2003).

c. The Ricoh Iwasaki `149 Patent

489. The claims of Ricoh's Iwasaki `149 patent are directed to a particular method of performing the OPC procedure, which is setting laser power to an appropriate level to record onto a particular disc. McLaughlin Tr. 1516:24-1518:7; RX-52 (Iwasaki `149 patent).

490. The OPC method defined by the Iwasaki patent consists of calculating a standardized gradation factor by monitoring the amplitudes of signals from test data patterns. McLaughlin Tr. 1520:23-1421:11; RX-52 (Iwasaki `149 Patent).

491. The Orange Book does not mandate a particular method for carrying out the OPC function. McLaughlin Tr. 1507:10-1509:17; RX-407C (Orange Book CD-R Standard at PH015759); RX-408C (Orange Book CD-RW Standard at PH023331-023332).

492. Philips's employee and technical witness, Hans Mons, testified that some of the characteristics the Orange Book defines for CD-Rs and CD-RWs are not mandatory, and that Orange Book-compliant CD-Rs and CD-RWs do not need to conform to the non-mandatory characteristics defined by the Orange Book. Mons Tr. 453:18-454:2; McLaughlin Tr. 1504:10-18.

493. At least one economically viable alternative for performing OPC exists that does not infringe the Iwasaki `149 patent. McLaughlin Tr. 1563:1-12. The OPC and write strategy method available from Calimetrics, Inc. was identified by Dr. McLaughlin as an alternative that is not covered by the Iwasaki

patent and would comply with the requirements of the Orange Book if it were used. McLaughlin Tr. 1521:12-1522:13; 1523:5-13.

494. The Calimetrics method is not covered by the Iwasaki `149 patent. McLaughlin Tr. 1521:12-18. The Iwasaki patent requires the calculation of a certain mathematical quantity, and the calculation of that mathematical quantity does not occur during the Calimetrics OPC procedure. McLaughlin Tr. 1521:19-1522:13.

495. Dr. Rubenstein has not rendered any opinion as to the essentiality of the Iwasaki `149 patent. Rubenstein Tr. 2263:11-2264:12.

d. The Sony Yamamoto `719 Patent

496. The Sony Yamamoto `719 patent relates to the ability to create, with a single laser beam, a master disc containing both the wobbled pre-groove and certain pre-recorded data. McLaughlin Tr. at 1534:14-25; RX-50.

497. The Yamamoto patent is not essential to practice the Orange Book because the Orange Book does not discuss or relate to how one should generate a master. McLaughlin Tr. at 1535:1-6.

498. There are alternative methods for implementing the functionality of the Yamamoto `719 patent, including using separate laser beams to pre-store the data and generate the wobble. McLaughlin Tr. at 1535:7-15.

499. A two-beam system can be used to generate both the

wobble and the prestored information in compliance with the Orange Book without practicing the claims of the Yamamoto patent. McLaughlin Tr. at 1535:16-1536:13.

500. According to Dr. McLaughlin, the Calimetrics two-beam mastering method is a commercially viable alternative to the patent. McLaughlin Tr. 1568:3-15, 1570:1-9.

501. The two-beam mastering system of the Calimetrics method allows a groove and pits to be simultaneously formed in a master disc. McLaughlin Tr. 1535:7-1536:13.

502. The two-beam alternative is not covered by the Yamamoto patent because it does not use one recording beam modulated at two different frequencies to create marks and a track. McLaughlin Tr. 1535:16-1536:13.

503. Dr. Rubenstein has not rendered any opinion as to the essentiality of the Yamamoto `719 patent. Rubenstein Tr. 2262:14-2263:10.

e. The Philips Kramer `493 and `209 Patents

504. The Kramer `209 and Kramer `493 patents are both directed to recordable discs with diffractive follow-on tracks. McLaughlin Tr. at 1536:14-25; RX-58 and RX-59.

505. The Kramer `209 and Kramer `493 patents are not complementary to one another. McLaughlin Tr. at 1538:15-24.

506. According to Dr. Rubenstein, the Kramer `209 and `493 patents are "technically essential" patents to the CD-R disc standard, but as of February 2002 had not yet reached an opinion on their essentiality to the CD-RW disc standard. *See* Rubenstein Tr. 2299:20-23; RX-87C (October 17, 2001 Rubenstein Status Report at PH065770); RX-1798C (February 25, 2002 Rubenstein Status Report at RK000239, RK000242).

507. According to Dr. McLaughlin, the Kramer `209 and Kramer `493 patents are not essential to practice the Orange Book because both patents are directed towards a single-beam tracking methods, and the Orange Book indicates that single- or three-beam systems can be used. McLaughlin Tr. at 1537:9-17; RX-407C at PH015776.

508. Under the claim construction of the Kramer `493 and `209 patents that has been reached in this Initial Determination, the claims of those patents cover both single-beam and three-beam methods. *See* FF Section III A.

509. Thus, the claims of the Kramer `493 and `209 patents are broad enough to encompass two of the three tracking methods that have been identified in the Orange Book as alternatives to one another, but there is no evidence in the record as to whether it covers the third alternative that is also identified in the Orange Book, known as the "Differential Phase Detection" or "DPD" method. *See* RX-407C (Orange Book CD-R Standard Attachment B13 at PH 015776).

f. The Taiyo Yuden Hamada '388 and '009 Patents

510. With respect to Taiyo Yuden's Hamada `388 and `009 patents, Dr. Rubenstein found that they were not technically essential to the Orange Book, but also found on the basis of tests conducted by his own independent expert, ETA-Optik, and by Taiyo Yuden that virtually all of the CD-R discs in the U.S. market practiced those patents. He therefore concluded that the Hamada patents were "essential as a practical matter," and included them in the CD-R disc pool as well. Rubenstein Tr. 2264:21-2280:6; RX-1777C (June 21, 2001 Rubenstein Status Report to Taiyo Yuden at RK008207); RX-1759C (October 16, 2001 Rubenstein Status Report to Taiyo Yuden at RK008151-53).

511. Of the CD-R brands of 27 different manufacturers that Dr. Rubenstein and his colleagues collected for testing purposes, 26 satisfied the tests for coverage by the patents that ETA Optik performed and all 27 satisfied the tests for coverage that Taiyo Yuden performed. *See* Rubenstein Tr. 2264:21-2280:6; RX-1759C (October 16, 2001 Rubenstein Status Report to Taiyo Yuden at RK008151-53).

512. To reach this result, however, Dr. Rubenstein had to construe the `009 patent in a particular way so that the test results would result in a finding of "commercial essentiality." *See* RX-1759C at RK008152.

513. Specifically, the relevant claim of the Hamada `009 patent requires an optical parameter to fall within a specific range, and that parameter is dependent upon a variable determined by measuring the thickness of the recording layer of a CD-R disc. *See* RX-1759C at

RK008152.

514. This measurement is shown in the patent to be essentially equal throughout the recording layer of a CD-R disc, but this disclosure does not account for CD-R discs that have a pregroove even though the patent acknowledges the use of pregrooves on optical discs. *See* RX-1759C at RK008152.

515. Dr. Rubenstein avoided this problem by deciding that it was appropriate to measure the thickness of the recording layer of such discs only in the pregroove "in view of the recording of information only in the pregroove" on the disc. *See* RX-1759C at RK008152.

516. Measuring thickness in this way yielded a higher result than if the thickness of the "land" on the disc had also been accounted for, since the thickness of the recording layer in the groove is thicker than it is in the "land." *See* RX-1759C at RK008152.

517. Using this value, ETA-Optik was able to report to Dr. Rubenstein that 25 of the 26 brands that it tested met the claim limitation of the `009 patent. *See* RX-1759C at RK008152.

518. However, one brand, the Verbatim CD-R disc manufactured by Mitsubishi, did not meet the claim limitation of the `009 patent. *See* RX-1759C at RK008152.

519. Dr. Rubenstein dismissed this difference on the ground that the Verbatim disc was "an old type of CD-R disc," that "newer discs do not use such thick dye," that "Mitsubishi's market share is only around 1.7-1.8%," and that "a Yamaha disc also

manufactured by Mitsubishi but bearing a different ATIP code did meet the requirement ...." See RX-1759C at RK008152.

520. Dr. Rubenstein also found that an alternative thickness measurement devised by Taiyo Yuden, consisting of a weighted average of the thickness of the recording layer in the groove and the "land," resulted in optical parameter values that fell within the claimed range for all 26 discs that were tested. RX-1759C at RK008152-53. He therefore concluded that both Hamada patents were "essential as a practical matter." *Id.*

521. In conducting his essentiality analysis of the Hamada patents, Dr. Rubenstein did not consider discs other than CD-Rs and CD-RWs. Rubenstein Tr. at 2285:10-19.

522. In performing essentiality analyses, it is not Dr. Rubenstein's practice to search optical data storage literature for alternative technologies. Dr. Rubenstein does not consider "theoretical alternatives". Rubenstein Tr. at 2284:20-2285:9.

523. Dr. McLaughlin disagreed with Dr. Rubenstein's analysis, finding that the Hamada patents relate to disc layer structure and have commercially viable substitutes that are not covered by the patents. McLaughlin Tr. 1539:9-22, 1540:18-1545:1.

524. The Hamada `388 patent describes the layer structure of a recordable optical disc and how the pits containing the recorded information are to be formed. McLaughlin Tr. at 1539:9-22.

525. The Hamada `388 patent is not essential to practice the Orange Book because the Orange Book does not require a specific disc layer structure and describes nothing about the mechanism for forming pits on the disc. McLaughlin Tr. at 1539:23-1540:5, 18-21.

526. Alternative technologies to that disclosed and claimed in the Hamada `388 patent exist. McLaughlin Tr. at 1540:18-25.

527. Mitsui Toatsu proposed and developed an optical disc made on a glass substrate that did not meet the claims of the Hamada `388 patent. McLaughlin Tr. at 1541:4-15; RX-1418AC and RX-14185C at PH048287.

528. Bayer AG developed a photo-addressable polymer that did not meet the claims of the Hamada `388 patent. McLaughlin Tr. at 1541:16-20.

529. Philips developed a tellurium-based material that did not meet the claims of the Hamada `388 patent. McLaughlin Tr. at 1541:21-24.

530. None of the Mitsui Toatsu, Bayer, and Philips alternatives are covered by the claims of the Hamada `388 patent because these methods do not use deformation of one of the layers as described in the Hamada patent. McLaughlin Tr. at 1542:8-16.

531. The Hamada `009 patent claims certain ranges for two optical parameters, rho and the complex index of refraction, related to how light is reflected from a disc. McLaughlin Tr. at 1542:17-1543:14; RX-47.

532. The Hamada `009 patent is not essential to practice

the Orange Book because the Orange Book does not specify the optical parameters that are claimed in the patent. McLaughlin Tr. at 1544:5-1545:1.

g. Other Non-essential Pool Patents Erroneously Classified as "Essential"

533. Other patents in the pools that have been identified by Dr. Rubenstein as "essential" but that Respondents contend are really non-essential are the Sony Ogawa `994 patent, and the Philips Spruit `351, Lokhoff `219, and Mimnagh `462 patents.

534. Dr. Rubenstein found that the Ogawa `994 patent was technically essential to the Orange Book and therefore included that patent in the CD-R disc pool. Rubenstein Tr. 2291:19-229216; RX-87C (October 17, 2001 Rubenstein Status Report at PH065774).

535. The Spruit `351, Lockhoff `219, and Mimnagh `462 patents were also found by Dr. Rubenstein to be technically essential to both the CD-R and CD-RW disc standards and were included in those pools. Rubenstein Tr. 2292:17-25; RX-126C (May 14, 2002 Rubenstein Status Report at PH065718, PH065719 and PH065726).

536. According to Dr. McLaughlin, the Ogawa, Spruit, Lokhoff, and Mimnagh patents are not essential to comply with the Orange Book CD-R and CD-RW specifications. McLaughlin Tr. 1500:16-1501:16; RX-45 (Ogawa); RX-48 (Lokhoff); RX-49 (Mimnagh); RX-53 (Spruit).

537. OPC is a function that is required to be performed in order to establish the proper write power that a laser

must use to write on a disc. McLaughlin Tr. at 1517:7-20.

538. The Orange Book does not mandate a particular method for carrying out OPC and write strategy functions. McLaughlin Tr. 1518:8-15, 1523:5-16,1524:1-7.

539. The Ogawa `994 patent relates to estimating the time interval that the laser must remain at a given spot on the disc before a pit or mark is formed on the disc. McLaughlin Tr. at 1517:21-1518:7; RX-45.

540. According to Dr. McLaughlin, the Spruit patent, like the Ogawa patent, relates to OPC and write strategy methods. McLaughlin Tr. 1517:21-1518:7, 1522:14-1523:4.

541. The Ogawa `994 patent is not essential to practice the Orange Book because the Orange Book does not require a particular method for performing OPC. McLaughlin Tr. at 1518:8-15.

542. The Calimetrics OPC method is an alternate technology to perform the same function as the Ogawa `994 patent that will create an Orange Book compliant disc without infringing that patent. McLaughlin Tr. at 1518:16-1519:1.

543. Dr. McLaughlin became aware of the Calimetrics alternative through his affiliation with Calimetrics. McLaughlin Tr. at 1520:16-22.

544. The Calimetrics OPC method uses a write strategy matrix and considers multiple data bits to determine how the laser power should be adjusted to record

information on the disc. McLaughlin Tr. at 1519:12-22.

545. The Calimetrics OPC method, which is not time-dependent, is not covered by the Ogawa patent. McLaughlin Tr. at 1519:23-1520:15.

546. The Spruit `351 patent relates to the use of a gradient similar to that in Iwasaki and then conveying the resulting information through the use of ATIP codes. McLaughlin Tr. at 1522:14-1523:4.

547. The Spruit `351 patent is not essential to comply with the Orange Book because the Orange Book does not specify a method for performing OPC. McLaughlin Tr. at 1523:5-13.

548. Patents are not complementary if there exists any overlap between the scope of the claims of the patents. McLaughlin Tr. at 1523:17-25.

549. The Spruit `351 patent is not essential to comply with the Orange Book because it uses the auxiliary codes described in another patent in the pool, the `764 patent (RX-57), and therefore is not complementary to the `764 patent. McLaughlin Tr. at 1523:13-16; 1524 1-7.

550. The Calimetrics method is not covered by the Spruit `351 patent because the information that is calculated and conveyed in the Spruit patent is not required to perform the Calimetrics OPC procedure. McLaughlin Tr. at 1524:8-1525:13.

551. The Calimetrics OPC and write strategy method does not infringe the Ogawa or Spruit patents.

McLaughlin Tr. 1518:16-1519:1, 1519:23-1520:15, 1521:12-1522:13, 1523:5-13, 1524:8-1525:13.

552. Dr. McLaughlin further testified that the Lokhoff patent relates to a copy control method (McLaughlin Tr. 1528:11-19; RX-48) and the Mimnagh patent relates to a recording velocity control system (McLaughlin Tr. 1532:10-17).

553. The Lokhoff `219 patent relates to a method of copy control wherein a copy bit is placed in the ATIP to indicate what kinds of information may properly be recorded on the disc. McLaughlin Tr. at 1528:11-19; RX-48.

554. The Lokhoff `219 patent is not essential to comply with the Orange Book because it does not function to meet one of the essential purposes of the Orange Book, which to ensure backward compatibility and interchangeability. McLaughlin Tr. at 1528:23-1529:5.

555. The Lokhoff `219 patent is not essential to comply with the Orange Book because the invention is implemented through the use of auxiliary codes that are described and claimed in the `764 patent (RX-57), which means Lokhoff `219 is not complementary to the `764 patent. McLaughlin Tr. at 1529:6-13.

556. The Lokhoff `219 patent is not essential to comply with the Orange Book because there exists alternative copy protection methods to implementing copy control in either the ATIP or in the subcode Q channel of the servo track, such as embedding the copy control in the content. McLaughlin Tr. at

1529:14-1530:3.

557. Embedding copy control in the content would satisfy the Orange Book but would not be covered by the Lokhoff '219 patent. McLaughlin Tr. at 1530:4-1531:21.

558. The Mimnagh '462 patent is related to conveying velocity-related information, *i.e.* the range of speeds at which a disc may be recorded upon, through the ATIP. McLaughlin Tr. at 1532:10-17.

559. The Mimnagh patent is not essential to practice the Orange Book because such velocity-related information is not required for backward compatibility and is not a function that is necessary for interchangeability. McLaughlin Tr. at 1532:18-25.

4. Unreasonableness of the Royalty Rate

560. In the 10 years since Philips has licensed its patent pools, sales of CD-R and CD-RW discs have become a mature, price-sensitive market of consumer commodities. McCarthy Tr. 1955:25-1956:16:, 1992:2-25; Beune Tr. 2384:2-2385:22.

561. In the late 1990s, prices of CD-R and CD-RW products have declined. J. Chen Tr. 888:7-9, 896:5-18.

562. In response to the Taiwan FTC's decision that Philips's CD-R patent pools are illegal, Sony and Taiyo Yuden negotiated and entered into separate license agreements with Gigastorage. J. Chen Tr. at 873:12-20.

563. Gigastorage is currently licensed by Sony and Taiyo Yuden to manufacture CD-Rs, and by Sony to manufacture CD-RWs. J. Chen Tr. at 833:2-5; RX-1466C; RX-1872C; RX-1873C; RX-1951C.

564. Gigastorage entered into a license agreement with Sony on September 1, 2001. J. Chen Tr. at 880:1-7; RX-1466C.

565. Under Gigastorage's September 1, 2001 license agreement with Sony, the royalty Gigastorage pays is adjusted by means of an "export ratio" such that Gigastorage pays royalties only for discs sold in countries where Sony has patents. J. Chen Tr. at 880:8-882:13; RX-1466C at PHX 009626 (§ 7), PHX 009628 (§ 4(i)), PHX 009642 (calculation of actual royalty adjusted for export ratio).

566. The export ratio under the September 1, 2001 license agreement between Sony and Gigastorage is [ ] percent, meaning that Gigastorage pays royalties on [ ] percent of its licensed products sold. J. Chen Tr. at 880:8-882:13; RX-1466C at PHX 009626 (§ 7), PHX 009628 (§ 4(i)), PHX 009642 (calculation of actual royalty adjusted for export ratio).

567. Sony does not have CD-R or CD-RW patents in Taiwan. J. Chen Tr. at 881:10-25; RX-1466C at PHX 009637-39.

568. The Philips CD-R and CD-RW patent pool licenses do not include an export ratio, or any other mechanism by which royalties are adjusted to reflect countries in which Sony does not have patents. J. Chen Tr. at 885:17-886:21; RX-1832C; RX-903C.

569. The Philips CD-R and CD-RW patent pool licenses required manufacturers in Taiwan, including Gigastorage and Princo, to pay the same royalty despite the fact that Sony did not have any CD-R or CD-RW patents in Taiwan. J. Chen Tr. at 885:17-886:21; RX-1832C; RX-903C.

570. Under Gigastorage's September 1, 2001 license agreement with Sony, the royalty Gigastorage pays is adjusted by means of a "cross-license discount" such that Gigastorage receives a [ ] percent discount for patents it has given Sony the option to cross-license. J. Chen Tr. at 882:23-884:8; RX-1466C at PHX 009628 (§ 4(ii)), PHX 009629, PHX 009640 (listing Gigastorage patents subject to cross-license), PHX 009642 (calculation of actual royalty adjusted for cross-license discount).

571. The few Gigastorage patents that Sony has the option to cross-license are not very important to Sony. J. Chen Tr, at 883:23-884:4.

572. Under its license agreement with Sony, Gigastorage pays royalties of [ ] these amounts then being reduced by the applicable export ratio and cross-license discount. J. Chen Tr. at 882:15-883:22; RX-1466C at PHX 009629, PHX 009642 (calculation of actual royalty adjusted for export ratio and cross-license discount).

573. Gigastorage entered into a new license agreement with Sony on October 1, 2002. J. Chen Tr. at 884:12-16; RX-1872C.

574. The export ratio under the October 1, 2002 license

agreement between Sony and Gigastorage is [ ] percent, meaning that Gigastorage pays royalties on [ ] percent of its licensed products sold. J. Chen Tr. at 884:12-885:6; RX-1872C at GT 004588 (§§ 4(i) and 4(ii)).

575. Under its current Sony separate license agreement, Gigastorage pays Sony a royalty of [ ] per disc, factoring in the current export ratio of [ ] percent and cross-license discount of [ ] percent. J. Chen Tr. at 885:2-12; 857:2-12, 875:11-16; RX-1872C.

576. Gigastorage entered into a license agreement with Taiyo Yuden on December 31, 2001. J. Chen Tr. at 875:25-876:5; RX-1875C.

577. Gigastorage's December 31, 2001 license agreement with Taiyo Yuden has a stated royalty rate of 1.5 Yen or 5% of the Net Selling Price (whichever is lower) per disc; however, in a Supplemental Agreement executed the same day, Gigastorage was required to pay a lower royalty rate of [ ] of the Net Selling Price. J. Chen Tr. at 876:6-878:19; RX-1875C at GT 004645 (¶ 3.2), GT 004654, GT 004655-56 (Art. 4(2)).

578. Gigastorage's actual royalty rate under the December 31, 2001 license agreement with Taiyo Yuden was [ ] of the Net Selling Price. J. Chen Tr. at 876:12-878:19; RX- 1875C at GT 004655-56 (Art. 4(2)).

579. In addition to royalties, Gigastorage paid [ ] to Taiyo Yuden for past use. RX-1875C at GT 004655.

580. Gigastorage entered into a new license agreement with Taiyo Yuden on December 31, 2002. J. Chen

Tr. at 878:20-879:12; RX-1873C.

581. Gigastorage's December 31, 2002 license agreement with Taiyo Yuden has a stated royalty rate of 1.5 Yen or 5% of the Net Selling Price (whichever is lower) per disc; however, in a Supplemental Agreement, Gigastorage was required to pay a lower royalty rate of [ ] of the Net Selling Price. J. Chen Tr. at 878:20-879:25; RX-1873C at GT 004661-62 (¶ 3. 1); RX-1951C at GT 00465 8 (Art. 3(2).

582. Under its current Taiyo Yuden separate license agreement, Gigastorage pays Taiyo Yuden a royalty of [ ] percent of Net Selling Price per disc. J. Chen Tr. at 857:2-12, 878:20-879:25; RX-1951 C at GT 004658 (Art. 3(2)).

583. On March 10, 1998, Philips sent a letter to Gigastorage stating that a separate license to Philips's patents is available, but explaining that separate licenses from Philips, Sony, and Taiyo Yuden would be more expensive than the pool license. J. Chen Tr. at 846:10-847:3; RX-1098C.

584. On March 10, 1998, Philips sent a letter to Gigastorage stating that a separate license to Philips's patents is available, with the caveat that once a company enters into a separate license, it is not possible to convert it into a combined (*i.e.*, pool) license at a later point in time. J. Chen Tr. at 846:10-847:3; RX-1098C.

585. Philips also told Gigastorage verbally that separate licenses would be more expensive than a patent pool license. J. Chen Tr. at 847:4-848:3.

586. On October 2, 1999, Philips sent Gigastorage a letter stating that separate licenses would be more expensive than a pool license. RX-1576C; Beune Tr. at 2460:22-2463:18.

587. Before signing the CD-R and CD-RW patent pool license agreements, Gigastorage considered entering into separate licenses with Philips, Sony, and Taiyo Yuden expecting that that would be less expensive than the pool license agreements. J. Chen Tr. at 855:17-856:8.

588. Before signing the CD-R and CD-RW patent pool license agreement, Gigastorage was dissuaded from entering into separate license agreements with Philips, Sony, and Taiyo Yuden because Philips told Gigastorage that separate licenses would be more expensive and because Philips told Gigastorage that separate licenses could never be converted into a joint license. J. Chen Tr. at 855:17-856:8.

589. When Gigastorage discussed with Philips entering into the CD-R patent pool license agreement, the patent list included over 100 patents and included some relating to other types of compact discs. J. Chen Tr. at 840:15-841:13.

590. When Gigastorage discussed with Philips entering into the CD-R patent pool license agreement, Gigastorage did not believe it needed a license to every patent in the pool and inquired into obtaining a license to less than all of the patents on Philips's patent list. Gigastorage hoped that by eliminating some patents the royalty rate would be lower. Philips responded that the royalty is the same regardless of the number of patents used. J. Chen Tr. at 840:15-

841:13, 848:4-11, 918:12-919:7.

591. In 1999, the Net Selling Price of a CD-R was approximately 55 to 60 cents per disc. J. Chen Tr. at 848:12-850:12.

592. In 1999, Philips's CD-R patent pool royalty rate of 10 Yen was approximately [ ] percent of the Net Selling Price. J. Chen Tr. at 848:12-850:12.

593. Gigastorage entered into the Philips CD-R patent pool license in October 1999. J. Chen Tr. at 915:21-916:1; RX-1832C.

594. Gigastorage entered into the Philips CD-RW patent pool license in October 1999. J. Chen Tr. at 915:21-916:1; RX-903 C.

595. When Gigastorage signed the CD-R patent pool license agreement in 1999, Gigastorage expected that CD-Rs would decline, as electronic products typically do, and that the royalty rate of 10 Yen would continue to grow as a percentage of Net Selling Price. J. Chen Tr. at 848:12-850:12, 917:1-13.

596. Even though Gigastorage knew the price of CD-Rs would continue to decline and that the royalty rate of 10 Yen would continue to grow as a percentage of Net Selling Price, Gigastorage entered into the CD-R patent pool license agreement in 1999 because of Philips's threats of initiating a criminal patent infringement lawsuit against the Chairman of Gigastorage. J. Chen Tr. at 850:13-851:1, 917:1-22.

597. One reason Gigastorage entered into the CD-R patent

pool license agreement was because Philips threatened to file a criminal patent infringement lawsuit against the chairman of Gigastorage. J. Chen Tr. at 842:19-844:2, 917:1-22; RX-1516C.

598. From 1997 to 2002, worldwide demand for CD-R discs increased from a few hundred thousand to more than 5 billion, supply increased from several hundred thousand to almost 8 billion, prices to consumers for CD-R and CD-RW discs decreased by more than 50% from 1999 to 2001, supply capacity increased from approximately 6 billion discs in 2000 to more than 10 billion discs in 2002, the number of CD-R manufacturers increased by nearly 50% from 1997 to 2002, CD-R and CD-RW drive sales that were negligible in 1996 increased to almost 60 million units in 2002, and the price of CD-R/RW drives decreased from $700 to approximately $100 over that period of time. *See* CX-619C at p. 3, 6, 8, 9, 17 and 18.

599. As a result of standardization, prices for CD-R/RW discs have fallen dramatically, as is typical with electronic technology. *See* Smith Tr. 1486:19-25.

600. Manufacturers tend to license all of the pool patents that they can license, both essential and non-essential, in order to avoid all possibility of infringement litigation from Philips and its licensor-partners; they do not pick and choose some lists and not others. *See, e.g.*, J. Chen Tr. 918:4-920:7.

601. Philips has always told the manufacturers that the cost of the intellectual property was a fixed cost that manufacturers should "appropriately reflect[ ] in [their] prices [their] costs of patent royalties." CX-

457, CX-465, CX-467.

5. Conclusion on Misuse Under the "Rule of Reason"

F. Purge of Patent Misuse

602. Philips offered no evidence that the anticompetitive effects of including many nonessential patents in the lists of essential patents in the CD-R/RW pools have dissipated. In fact, Philips's economic expert, Dr. McCarthy, did not examine the patents that were in the pool to determine their subject matter, let alone determine whether competition in these areas had been restored. McCarthy Tr. 2130.

G. Conclusion on Patent Misuse

See, below, Conclusions of Law.

CONCLUSIONS OF LAW

1. The Commission has personal jurisdiction over the parties, and subject matter jurisdiction over this investigation. *See* Op. at 7-8 & n.7; FF Sections I and II.

2. The importation or sale requirement of section 337 has been established for purposes of this Initial Determination. *See* Op. at 7-8; FF Section II.

3. It has been established by at least a preponderance of the evidence that the accused products infringe the asserted claims of the `209 and `493 patents. *See* Op. at 50; FF Section III B.

4. It has not been established by clear and convincing evidence that the asserted claims of the `209 and `493 patents are invalid for failing to comply with the enablement requirement of 35 U.S.C. § 112. *See* Op. at 53; FF Section III C.

5. It has not been established by clear and convincing evidence that the asserted claims of the `209 and `493 patents are invalid due to failure to provide a written description as required by 35 U.S.C. § 112. *See* Op. at 57; FF Section III C.

6. It has not been established by clear and convincing evidence that the asserted claims of the `209 and `493 patents are invalid as obvious in view of the prior art. *See* Op. at 64; FF Section III C.

7. It has been established by at least a preponderance of the evidence that the accused products infringe the asserted claims of the `401 patent. *See* Op. at 85; FF IV B.

8. It has not been established by clear and convincing evidence that the asserted claims of the `401 patent are invalid due to obviousness. *See* Op. at 92-93; FF Section IV C.

9. It has not been established by clear and convincing evidence that the asserted claims of the `401 patent are invalid for failure to disclose the best mode in the patent specification. *See* Op. at 98; FF Section IV C.

10. It has been established by at least a preponderance of the evidence that the accused

products infringe the asserted claims of the `856 patent. See Op. at 102; FF Section V B.

11. It has not been established by clear and convincing evidence that the asserted claims of the `856 patent are invalid due to obviousness. *See* Op. at 107; FF V C.

12. It has not been established by clear and convincing evidence that the asserted claims of the `856 patent are invalid due to a failure of the specification to supply the best mode. *See* Op. at 111; FF Section V C.

13. It has been established by at least a preponderance of the evidence that the accused products infringe the asserted claims of the `825 patent. *See* Op. at 117; FF Section VI B.

14. It has not been established by clear and convincing evidence that the asserted claims of the `825 patent are invalid due to anticipation or obviousness. *See* Op. at 124; FF Section VI C.

15. It has been established by at least a preponderance of the evidence that the accused products infringe the asserted claims of the `764 patent. *See* Op. at 134; FF VII B.

16. It has not been established by clear and convincing evidence that any asserted claim of the `764 patent is invalid due to anticipation. *See* Op. at 136; FF Section VII C.

17. It has not been established by clear

and convincing evidence that any asserted claim of the `764 patent is invalid due to obviousness. *See* Op. at 138; FF Section VII C.

18. The domestic industry requirement of section 337 has been satisfied. *See* Op. at 138; FF Section VIII.

19. The asserted patents are unenforceable due to patent misuse. Op. at 182, 221; FF Section IX.

INITIAL DETERMINATION AND ORDER

Based on the foregoing opinion, findings of fact, conclusions of law, the evidence, and the record as a whole, and having considered all pleadings and arguments, including the proposed findings of fact and conclusions of law, it is the Administrative Law Judge's INITIAL DETERMINATION ("ID") that no violation of section 337 of the Tariff Act of 1930, as amended, has occurred in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain recordable compact discs or rewritable compact discs by reason of infringement of claims 1, 5, or 6 of U.S. Letters Patent 4,807,209, claim 11 of U.S. Letters Patent 4,962,493, claims 1, 2, or 3 of U.S. Letters Patent 4,972,401, claims 1, 3, or 4 of U.S. Letters Patent 5,023,856, claims 1-5 or 6 of U.S. Letters Patent 4,999,825, or claims 20, 23-33, or 34 of U.S. Letters Patent 5,418,764.

The Administrative Law Judge hereby CERTIFIES to the Commission this ID, together with the record of the hearing in this investigation consisting of the following:

1. The transcript of the hearing, with appropriate corrections as may hereafter be ordered by the

Administrative Law Judge; and further,

2. The exhibits accepted into evidence in this investigation as listed in the attached exhibit lists, and JX-1C (which contains certain deposition transcripts) admitted after the close of the hearing.

In accordance with 19 C.F.R. § 210.39(c), all material found to be confidential by the Administrative Law Judge under 19 C.F.R. § 210.5 is to be given *in camera* treatment.

The Secretary shall serve a public version of this ID upon all parties of record and the confidential version upon counsel who are signatories to the Protective Order (Order No. 1)issued by the Administrative Law Judge in this investigation, and upon the Commission investigative attorney.

To expedite service of the public version, counsel are hereby ORDERED to serve on the Administrative Law Judge by no later than November 17, 2003, a copy of this ID with those sections considered by the party to be confidential bracketed in red, accompanied by a list indicating each page on which such a bracket is found.

Pursuant to 19 C.F.R. § 210.42(h), this ID shall become the determination of the Commission unless a party files a petition for review pursuant to § 210.43(a) or the Commission, pursuant to § 210.44, orders on its own motion a review of the ID or certain issues herein.

_____

Sidney Harris
Administrative Law Judge

Issued: October 24, 2003

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

04-1361
U.S. PHILIPS CORPORATION,

Appellant,

v.

INTERNATIONAL TRADE COMMISSION,

Appellee,

and

PRINCO CORPORATION, PRINCO AMERICA CORPORATION,
GIGASTORAGE CORPORATION TAIWAN,
GIGASTORAGE CORPORATION USA, and LINBERG ENTERPRISE INC.,

Intervenors.

ORDER

Filed
U.S. Court of Appeals for the
Federal Circuit
December 19, 2005
Jan Horbaly
Clerk

ORDER

A petition for rehearing en banc having been filed by the INTERVENORS, and a response thereto having been invited by the court and filed by the APPELLANT, and the matter having first been referred as a petition for rehearing to the panel that heard the appeal, and thereafter the petition for rehearing en banc and response having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the petition for rehearing en banc be, and the same hereby is, DENIED.

The mandate of the court will issue on December 27, 2005.

FOR THE COURT,

Jan Horbaly Clerk

Dated: December 19, 2005

cc: A. Douglas Melamed
Clara Kuehn, Alan D. Smith

US PHILIIPS V ITC, 04-1361
(ITC – 337-TA-474)

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* Note: Pursuant to Fed.Cir. R. 47.6, this order is *
* not citable as precedent. It is a public record. *
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IP/06/139

Brussels, 9th February 2006

Competition: Commission closes investigation following changes to Philips CD-Recordable Disc Patent Licensing

The European Commission has closed an investigation into the CD-R Disc Licensing Programmes administered by Philips in Europe following changes to those programmes. The inquiry was launched in 2003, following a complaint by FIPCOM (the Federation of Interested Parties in fair Competition in the Optical Media sector) an association of European manufacturers of CD-Recordable discs. The complaint alleged that the terms and conditions of licensing of the CD-R technology violated the EC Treaty competition rules on restrictive business practices (Article 81) and abuses of dominant positions (Article 82). Philips revised the programmes to ensure that all the necessary information concerning the licensed technology is available and that the programmes are managed in a fair and non discriminatory way. In view of these improvements and the withdrawal of its complaint by FIPCOM subsequent to settlement negotiations, the Commission has decided to close the case.

The new licensing conditions offered by Philips are likely to bring about lower prices and more transparency for millions of consumers of recordable CDs. Fair and non-discriminatory terms of licensing are essential to ensure that technology license agreements do not restrict competition. Since 1996 Philips Electronics has offered European manufacturers a joint portfolio license which includes its own CD-R disc patents as well as those of Sony and Taiyo Yuden, a Japanese technology company. Philips undertook to discontinue the joint patent portfolio license programme in

Europe with effect from 15 December 2005.

In addition, Philips has, beginning in 2001, offered an individual license, the Philips Only License Agreement (PLA), which is limited to its own CD-R patents. The revisions proposed by Philips to this agreement are considered satisfactory. The most important changes in the new licensing agreement are:

- making available on its website summary reports of independent experts regarding those Philips patents that are essential to produce CD-R discs
- adding the explicit obligation for Philips to address technical problems associated with the management of the CD-R standard
- updating the CD-R standard to clarify that discs that do not use Philips' Multi Speed proprietary technology but alternative high speed recording technologies qualify as CD-R discs.

Philips also reduced the level of royalty from 4.5 US cents to 2.5 US cents per disc, and undertook to apply this new rate retroactively from 1 October 2005 to the licensees that are compliant with the licensing program and have paid all royalties due.

The Commission intends to continue to closely monitor existing or new technology pools, in particular those that support or establish a *de facto* or a *de jure* industry standard in order to ensure that they comply with Community competition rules.

(3)

FILED
MAY 19 2006
OFFICE OF THE CLERK
SUPREME COURT, U.S.

No. 05-1341

IN THE

Supreme Court of the United States

PRINCO CORPORATION, *et al.*,

Petitioners,

v.

U.S. PHILIPS CORPORATION,

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF FOR THE RESPONDENT IN OPPOSITION

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QUESTION PRESENTED

Whether the Federal Circuit erred in holding (i) that the factual record in this case could not support a finding of patent misuse, either under a *per se* test or under the rule of reason and (ii) in any event, that the package patent licenses Philips offers to manufacturers to enable them to make CD-R and CD-RW discs differ in critical respects from "tying" arrangements previously considered by this Court, have substantial procompetitive features, and cannot be condemned as *per se* anticompetitive.

CORPORATE DISCLOSURE STATEMENT

U.S. Philips Corporation is a wholly-owned subsidiary of Philips Holding U.S.A., Inc., which in turn is a wholly-owned subsidiary of Koninklijke Philips Electronics N.V., a publicly held company. No publicly held company owns 10% or more of the shares of Koninklijke Philips Electronics N.V.

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IN THE

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No. 05-1341

PRINCO CORPORATION, *et al.*,

Petitioners,

v.

U.S. PHILIPS CORPORATION,

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BRIEF FOR THE RESPONDENT IN OPPOSITION

STATEMENT

1. In the 1980s and 1990s, Philips and Sony developed the technology underlying consumer-recordable (CD-R) and then consumer-rewritable (CD-RW) compact discs. *See* Pet. App. 2a, 112a-114a, 201a-202a. Two other companies, Taiyo-Yuden and Ricoh, made important contributions. *See id.* at 113a-114a. These technological innovations were disclosed and claimed in patents around the world, including in the United States.

The new technology did not commercialize itself. Philips and Sony invested in the development of product standards, which they embodied in a technical manual known as the Orange Book. Pet. App. 2a, 202a-205a. They offered all interested manufacturers non-exclusive access to the standards, along with worldwide licenses to the patents needed

to implement them. *See* Pet. App. 2a-3a, 113a. This approach secured the benefits of compatibility and interoperability in a worldwide market while using competition among manufacturers to promote rapid and widespread adoption of the standards, the development of manufacturing capacity, broad availability of compliant products, reductions in unit cost, and the pursuit of complementary innovations.

A manufacturer contemplating adopting the Orange Book technology needed not only access to the standards but licenses under all relevant patents. There was, however, uncertainty about what features or approaches would meet with market success, what approaches might exist to address particular issues, what patents would ultimately be held to be enforceable against particular products, and therefore what patents a manufacturer might ultimately need the right to use. *See, e.g.*, Pet. App. 30a-31a, 63a. To alleviate this uncertainty, promote adoption of the Orange Book standards, and simplify the licensing process (including reducing its own costs of negotiation, monitoring, and enforcement), Philips secured the right to license relevant patents held by the other developers of the technology, and offered manufacturers single licenses that assured them of the right to use any necessary patents held by the licensors. *See id.* at 3a, 23a-24a, 113a-114a. Philips also offers licenses to packages that include only its own CD-R or CD-RW patents. *Id.* at 3a.

The CD-R and CD-RW licenses have always required manufacturers to pay a specified royalty on every disc they sell that uses technology covered by any one or more of the licensed patents. The royalty does not vary depending on the number of patents used. Pet. App. 3a. While discs manufactured under the licenses must conform to the Orange Book standard, the licenses do not require a manufacturer to use any patent. If a manufacturer can make a disc without infringing any of the licensed patents, it will owe no royalty under the license. In substance, a licensee agrees to pay a known price for the right to manufacture Orange Book

discs and receives a license to use any of the licensors' patents that it might need.

This licensing approach proved very successful in stimulating market adoption of the technology and vigorous competition in the product market. By 2003, more than 100 manufacturers had been licensed at some point, and 60-70 had active licenses. Pet. App. 223a, 237a. Worldwide output of CD-R discs jumped from hundreds of thousands in 1997 to nearly 8 billion in 2002. *See id.* at 194a, 239a. The increase in supply brought equally dramatic reductions in disc prices. *See id.* Between 1996 and 2002, for example, the wholesale per-disc price for CD-R discs dropped from around $4.75 to around 12 cents. C.A. App. A3944.

2. Petitioners make CD-R and CD-RW discs in Taiwan, import them into the United States, and sell them. *See* Pet. App. 3a-4a. Although their products are based on technology covered by Philips' U.S. patents, petitioners have no licenses and pay no royalties. When they began making discs in the late 1990s, Philips contacted them about the need for licensing and engaged in extended negotiations. *Id.* at 245a, 249a-250a, 253a. Each manufacturer ultimately signed at least one license agreement, but each also soon stopped paying royalties. *Id.* at 3a, 245a-246a, 249a-250a, 253a-254a. Every one of the millions of discs that petitioners import into the United States infringes Philips' U.S. patents. *See id.* at 36a-38a.

Philips filed a complaint with the United States International Trade Commission seeking exclusion of petitioners' discs under Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, on the ground that they infringe six U.S. patents held by Philips. Pet. App. 3a.[1] In response,

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[1] Philips also filed a patent infringement action in the United States District Court for the Southern District of New York. The district court declined to follow the ITC's decision in this case (which had no preclusive effect, *see Texas Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1568-1569 (Fed. Cir. 1996)), rejected petitioners' misuse theories, and granted summary judgment for Philips on liability. *U.S. Philips*

petitioners challenged the validity and scope of the asserted patents and further complained (for the first time) that Philips' licensing practices were anticompetitive.[2]

The ALJ rejected petitioners' challenges to the validity of Philips' patents and agreed that petitioners were infringing them. Pet. App. 4a, 38a, 310a-313a. He refused to find a violation of Section 337, however, because he agreed with petitioners that Philips' licensing practices amounted to "misuse" of its patents and justified refusing to enforce them. *Id.* at 4a, 39a-40a, 200a, 313a. The ALJ's opinion suggests that he thought Philips' principal sin was charging royalties that did not "afford[] licensees a decent profit margin." *Id.* at 196a; *see id.* at 152a-156a, 193a-199a. He articulated, however, a number of theories of supposed misuse. *See id.* at 4a, 40a & nn.3-4.

The ITC affirmed, adopting only a "tying" theory. Pet. App. 36a-105a. The Commission recognized that this Court and the Federal Circuit have condemned tying arrange-

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Corp. v. *Princo Corp.*, 361 F. Supp. 2d 168 (S.D.N.Y. 2005). The Federal Circuit vacated the district court's decision on misuse ("without suggesting that the court reached the wrong ultimate conclusion on the issue") because it was based on an erroneous interpretation of 35 U.S.C. § 271(d)(5). *U.S. Philips Corp.* v. *Princo Corp.*, No. 05-1388, 2006 WL 774601, at *3 (Fed. Cir. Mar. 27, 2006). We are informed by Philips' counsel in that case that at a status hearing on May 11, 2006, the district court directed the submission by June 14 of simultaneous briefs addressing whether there is any triable issue of fact with respect to patent misuse; indicated that on the same day it will hear whatever further argument it deems necessary on that issue; and tentatively set July 18 for the beginning of a trial on infringement damages.

[2] The testimony of petitioners' own officers demonstrated that the last thing they were actually worried about was any *lack* of competition. They complained about the explosion in the supply of CD-R and CD-RW discs, the rapid drop in disc prices, and the fiercely competitive markets in which they operated. *See* Resp. C.A. Br. 13. The president of petitioner Princo went so far as to blame Philips' open-licensing policy for the downward trend in disc prices: "They give [licenses] to whoever would pay money for it. And so, there are too many producers worldwide, manufacturing discs; and so, they all compete with each other and, as a result, the price comes down." C.A. App. A3703.

ments as *per se* misuse only in cases "involv[ing] a tying patent and a tied *product*, rather than a tying patent and a tied *patent*." *Id.* at 49a. It nonetheless concluded that extending *per se* analysis to patent packages was "a reasonable application of Supreme Court precedent." *Id.* at 49a-50a. It held that a mandatory package license was *per se* anticompetitive if the licensor had market power in the tying-patent market and the package "tied" together licenses to patents that were economically separate products. *Id.* at 61a; Pet. 9.

The Commission identified the tying-product market as "the United States market for licensing the essential U.S. patents for the manufacture of CD-R/RW discs in compliance with Orange Book standards." Pet. App. 64a. It found that Philips had power in that market because it concluded there were "no close substitutes for CD-R/RWs" and because it recognized that manufacturers needed licenses to at least some of Philips' patents in order to make discs. *Id.* at 65a-66a. It reasoned that all licenses in a package were tied together because licensees did not have the option of licensing individual patents at individual prices. *Id.* at 66a-76a. And it concluded that four patents included in the package licenses were separate products for purposes of tying analysis because in its view they were not essential to manufacture Orange Book-compliant discs. *Id.* at 76a-89a; *see id.* at 55a, 62a-64a. Applying the test it had articulated, the ITC held that Philips' licenses involved *per se* misuse. *Id.* at 62a-64a, 90a. It also offered a cursory analysis under the rule-of-reason, reaching the same conclusion. *Id.* at 90a-105a.

3. The Federal Circuit reversed. Pet. App. 1a-35a. The court recognized three central flaws in the ITC's decision.

First, the court properly focused on two features of the Philips licenses: They do not require licensees to use any of the licensed patents, and a licensee that uses at least one of the patents pays the same per-disc royalty no matter how many or few of the other patents it uses. *See, e.g.*, Pet. App. 14a-16a. The court recognized that those features, and the special nature of patent licenses, distinguish this case from cases in which unlawful or anticompetitive tying has been

found. *Id.* at 12a-22a. In light of those distinctions and of the "procompetitive effect[s]," "advantages" and "efficiencies" of nonexclusive package licenses for complementary patents, the Philips licenses cannot be "'conclusively presumed to be unreasonable'" and therefore cannot be deemed to be *per se* misuse. *Id.* at 23a-24a (quoting *Northern Pac. Ry. Co.* v. *United States*, 356 U.S. 1, 5 (1958)).

Second, the court explained that the "'essential characteristic'" of an invalid tying arrangement is that the seller coerced buyers to buy the tied product instead of another product that they would have preferred to purchase from someone else. Pet. App. 25a (quoting *Jefferson Parish Hosp. Dist. No. 2* v. *Hyde*, 466 U.S. 2, 12 (1984)). Accordingly, to establish misuse, even under the *per se* test, there must be proof both that there is some "commercially practicable" alternative to the tied product to which buyers (here, licensees) might have turned (*id.* at 26a) and that the alleged tying arrangement actually interfered with a purchaser's ability to use a preferred alternative, for instance by requiring licensees either to use a tied patent or to pay extra for the license to it (*id.* at 27a, 29a; *see id.* at 13a-18a). Reviewing the record, the court concluded that there was no substantial evidence to support either necessary finding. *Id.* at 27a-30a.

Third, the court held that the misuse determination could not be sustained under the Commission's alternative rule-of-reason rationale, both because there was no evidence of any harm to competition (Pet. App. 33a) and because, in any event, the Commission failed to consider the substantial procompetitive effects of Philips' package licenses (*id.* at 33a-34a).

Because the Commission did not address all of the ALJ's grounds for finding misuse or reach questions of remedy, the court remanded the case to the Commission for "further proceedings . . . with respect to whether Philips's patents are enforceable and, if so, whether Philips is entitled to any relief." Pet. App. 35a. Those questions remain pending before the Commission.

ARGUMENT

Petitioners argue from the premise that the Federal Circuit has "create[d] a special exception from this Court's *per se* rule against tying" that shields any "patent-to-patent tying." Pet. 12,-15; *see* Pet. i. That is not correct. The court of appeals recognized the *per se* rule that has been applied in previous cases and held, in the alternative, (i) that the ITC's determination of tying misuse could not be sustained under that rule (or under the rule of reason) on the facts in the record before the Commission and (ii) that the *per se* rule in any event has no application to the particular licenses at issue here because they do not require the licensee to use any patent, charge no incremental royalty for the use of any "nonessential" patent, and offer substantial procompetitive benefits while threatening none of the competitive harm that the prohibition on tying is intended to prevent. In addition, the decision below remains interlocutory, and there is parallel district court litigation that could affect the legal or practical posture of this case. There is accordingly no good reason for review by this Court. Review would only further delay Philips' efforts to seek relief, under a statute designed to secure protective action "at the earliest practicable time," 19 U.S.C. § 1337(b)(1), from petitioners' ongoing willful manufacture and importation into the United States of goods that infringe Philips' U.S. patents.

1. The Federal Circuit's decision makes clear that in this case the ITC's tying theory could not be sustained as a matter of fact—even under the *per se* test that petitioners espouse. Pet. App. 25a-30a. That determination does not warrant review.

As the Federal Circuit explained (Pet. App. 25a-27a), to find tying under the *per se* test, the Commission had to conclude not only that Philips had market power in the market for its essential CD-R/RW patents but also that it used those patents to force disc manufacturers to license economically separate nonessential patents instead of "commercially prac-